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# UNIVERSITY BULLETIN

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JULY, 1917

UNIVERSITY OF MICHIGAN

## MEDICAL SCHOOL

ANNUAL ANNOUNCEMENT FOR  
1917-1918

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1917-1918



ANN ARBOR  
PUBLISHED BY THE UNIVERSITY  
1917

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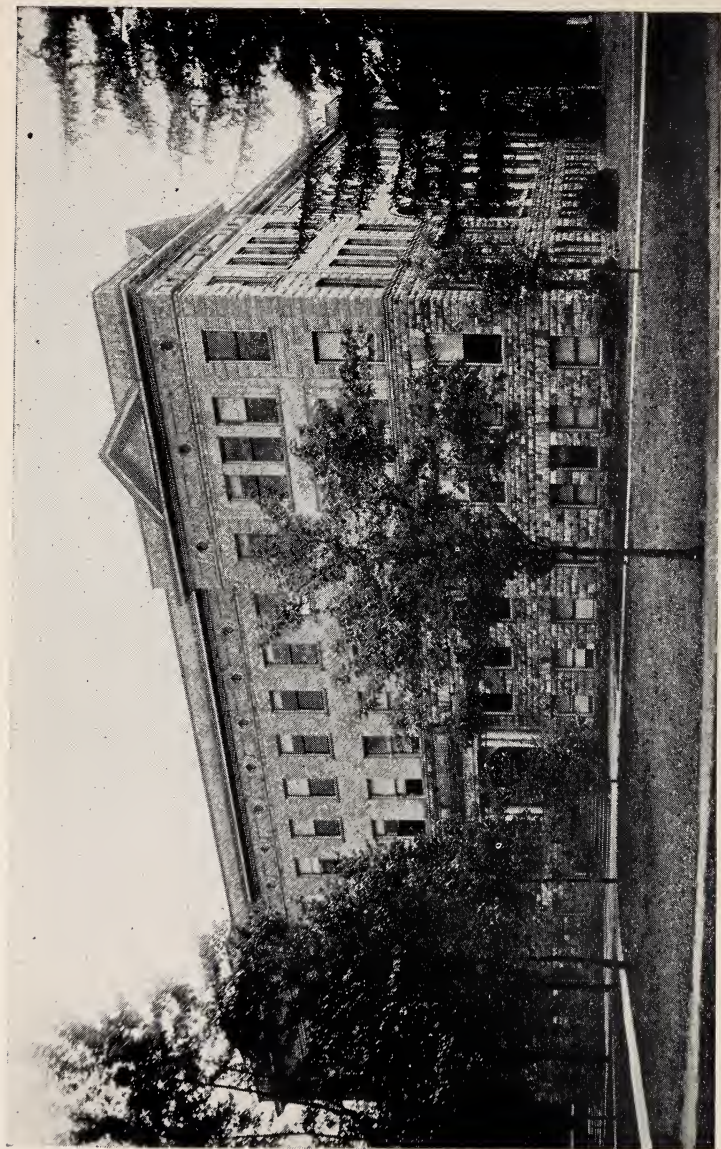


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MEDICAL BUILDING



UNIVERSITY OF MICHIGAN

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# MEDICAL SCHOOL

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ANNUAL ANNOUNCEMENT  
1917-1918



ANN ARBOR  
PUBLISHED BY THE UNIVERSITY  
1917

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1917

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## JANUARY

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Days of regular college session are printed in Light face type; Sundays, holidays, and vacations in Dark face.

## ANNOUNCEMENTS FOR 1917-1918

### 1917

October 2.	First Semester Begins.
October 2, 10 A. M.	Opening Address.
October 4, 5, 6.	Examinations for the removal of conditions.
November 29.	Holiday, Thanksgiving Day.
December 19.	(Evening.) Holiday Vacation Begins.

### 1918

January 3.	(Morning.) Exercises resumed.
January 3.	Examinations for the removal of conditions.
February 8.	(Evening.) First Semester Closes.
February 11.	Second Semester Begins.
February 22.	Holiday, Washington's Birthday. Celebration of Founders' Day.
April 5.	(Evening.) Recess begins, ending April 15. (evening).
April 18, 19, 20.	Examinations for the removal of conditions.
May 30.	Holiday, Memorial Day.
June 23.	Baccalaureate Address.
June 26.	Alumni Day.
June 27.	Commencement.
July 1.	Summer Session.
October 1.	First Semester Begins.

## **BENEFACTORS**

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### **The Elizabeth H. Bates Bequest**

In the spring of 1898, Dr. Elizabeth H. Bates, of Port Chester, N. Y., died, leaving to the Medical School an estate valued at about \$140,000. Dr. Bates was in active practice for many years. She took a deep interest in the medical education of women, and the bequest may be looked upon as a recognition by her of the successful efforts made by the University of Michigan to give to women medical instruction equal to that furnished men. In accordance with a provision of the will, the title of Bates Professor of Diseases of Women and Children has been given to Dr. Reuben Peterson. (The didactic and clinical work in connection with children's diseases is in charge of the chair of Internal Medicine, as heretofore.)

### **The Treadwell Bequest**

The late Mrs. Edward Treadwell, of Ann Arbor, bequeathed to University Hospital the sum of \$2,000.

### **The Davis Bequest**

The late Mrs. Davis, of New Castle, Ind., made the University Hospital and the Ann Arbor Society for the Prevention of Cruelty to Animals her residuary legatees. The value of this bequest is about \$2,000.

### **The Palmer Bequest**

Mrs. Palmer, widow of Professor Alonzo B. Palmer, formerly Dean of the School, left the sum of thirty-five thousand dollars to the Hospital, and the "Palmer Ward" has been erected and equipped as a memorial to this distinguished pioneer in American medicine.

In addition to the above sum, Mrs. Palmer left \$15,000, the income from which is used to support free beds in the University Hospital.

### **The Mary J. Furnum Bequest**

By the will of the late Mary J. Furnum, of Ann Arbor, there was bequeathed to the Palmer Hospital Fund \$1,000, the interest from which, by resolution of the Board of Regents, is to be used for the purchase of apparatus for the study of Children's Diseases.



### **The Mary Skeels Gradle Memorial Fund**

Mr. Walter Gradle, Lit. 1900, of Chicago, Illinois, has given to the University Hospital for the use of the Children's Ward, the sum of \$1,000, to be known as the Mary Skeels Gradle Memorial Fund.

### **Fund of the Class of 1890**

Some years ago this class raised a sum of five hundred dollars to aid worthy students in finishing their courses. This amount has been paid and is in the hands of the treasurer of the University. In 1915 the class voted to raise an additional five hundred dollars to be added to this sum.

# Board of Regents

---

HARRY B. HUTCHINS, LL.D.,  
PRESIDENT

	TERM EXPIRES
HON. WILLIAM L. CLEMENTS, <i>Bay City</i> ,	Dec. 31, 1917
HON. HARRY C. BULKLEY, <i>Detroit</i> ,	Dec. 31, 1917
HON. BENJAMIN S. HANCHETT, <i>Grand Rapids</i> ,	Dec. 31, 1919
HON. LUCIUS L. HUBBARD, <i>Houghton</i> ,	Dec. 31, 1919
HON. WALTER H. SAWYER, <i>Hillsdale</i> ,	Dec. 31, 1921
HON. VICTOR M. GORE, <i>Benton Harbor</i> ,	Dec. 31, 1921
HON. JUNIUS E. BEAL, <i>Ann Arbor</i> ,	Dec. 31, 1923
HON. FRANK B. LELAND, <i>Detroit</i> ,	Dec. 31, 1923

---

SHIRLEY W. SMITH, A.M.,  
SECRETARY

---

ROBERT A. CAMPBELL,  
TREASURER

---

HON. FRED E. KEELER,  
SUPERINTENDENT OF PUBLIC INSTRUCTION  
(Office at Lansing)

# Members of the Faculty and Other Officers\*

---

HARRY BURNS HUTCHINS, LL.D., PRESIDENT.

508 Monroe Street.

VICTOR C. VAUGHAN, Ph.D., Sc.D., M.D., LL.D., DEAN,  
Professor of Hygiene and Physiological Chemistry.

221 South State Street.

CHARLES BEYLARD GUERARD DE NANCREDE, A.M.,  
M.D., LL.D., Professor of Surgery and Clinical Surgery,  
and Director of Surgical Clinics in the Medical School.

13 Cutting Apts.

WARREN P. LOMBARD, A.B., Sc.D., M.D., Professor of  
Physiology.

805 Oxford Road.

REUBEN PETERSON, A.B., M.D., Bates Professor of Obstet-  
rics and Diseases of Women. Medical Director of Univer-  
sity Hospital.

1416 Hill Street.

FREDERICK G. NOVY, Sc.D., M.D., Professor of Bacteriol-  
ogy, and Director of the Hygienic Laboratory.

721 Forest Avenue.

G. CARL HUBER, M.D., Professor of Anatomy, and Director  
of the Anatomical Laboratories.

1330 Hill Street.

ALDRED SCOTT WARTHIN, Ph.D., M.D., Professor of Path-  
ology, and Director of the Pathological Laboratory.

1020 Ferdon Road.

WALTER ROBERT PARKER, B.S., M.D., Professor of Oph-  
thalmology.

311 South State Street.

R. BISHOP CANFIELD, A.B., M.D., Professor of Oto-Laryn-  
gology.

1503 Washtenaw Ave.

ALBERT MOORE BARRETT, A.B., M.D., Professor of Psy-  
chiatry and Diseases of the Nervous System, and Director  
of the Psychopathic Hospital.

630 Oxford Road.

---

\* Appointments other than those of Professorial rank are for the  
year 1916-1917.

- CHARLES WALLIS EDMUNDS, A.B., M.D., SECRETARY,  
Professor of Materia Medica and Therapeutics.  
1619 Cambridge Road.
- UDO J. WILE, A.B., M.D., Professor of Dermatology and  
Syphilology. 1919 Geddes Ave.
- ROLLO E. MCCOTTER, M.D., Professor of Anatomy.  
809 E. University Avenue.
- CYRENUS G. DARLING, M.D., Professor of Surgery.  
722 Forest Avenue.
- NELLIS BARNES FOSTER, B.S., M.D., Professor of Internal  
Medicine. 1004 Oakland Avenue.
- CLARENCE A. LIGHTNER, Ph.B., LL.B., Non-resident Lec-  
turer on Medical Jurisprudence. Detroit.
- JAMES GERRIT VAN ZWALUWENBURG, B.S., M.D., As-  
sociate Professor of Roentgenology. 927 Cornwell Place.
- CARL DUDLEY CAMP, M.D., Associate Professor of the Dis-  
eases of the Nervous System. 727 Forest Avenue.
- DAVID MURRAY COWIE, M.D., Associate Professor of Pedi-  
atrics and Internal Medicine. 1617 Cambridge Road.
- IRA D. LOREE, M.D., Associate Professor of Genito-Urinary  
Surgery. 122 North Thayer Street.
- PAUL HENRY DE KRUIF, Ph.D., Assistant Professor of Bac-  
teriology.
- CARL VERNON WELLER, A.B., M.D., Assistant Professor of  
Pathology.
- LOUIS HARRY NEWBURGH, A.B., M.D., Assistant Profes-  
sor of Internal Medicine.
- OTIS MERRIAM COPE, A.B., M.D., Instructor in Physiology.
- MARK MARSHALL, B.S., A.B., M.D., Instructor in Thera-  
peutics.
- STACY RUFUS GUILD, A.B., A.M., Instructor in Histology.
- ARNOLD L. JACOBY, A.B., M.D., Instructor in Psychiatry.
- CHARLES LEE WASHBURN, M.D., Instructor in Ortho-  
pedic Surgery.
- GEORGE SLOCUM, M.D., Instructor in Ophthalmology.

RUDOLPH A. BARTHOLOMEW, A.B., M.D., Instructor in Obstetrics and Gynecology.

LESLIE LEE BOTTSFORD, A.B., M.D., Instructor in Obstetrics and Gynecology and Demonstrator of Obstetrics.

QUINTER OLIN GILBERT, A.M., M.D., Instructor in Clinical Microscopy.

ROY A. BARLOW, B.S., M.D., Instructor in Otolaryngology.

WAYNE JASON ATWELL, A.B., Instructor in Anatomy.

JOHN LOCKE WORCESTER, M.D., Instructor in Anatomy.

RAYMOND FARNUM WAFER, M.D., Instructor in Anatomy.

JOHN WESLEY SHERRICK, B.S., M.D., Instructor in Gynecology and Obstetrics and Assistant Demonstrator of Obstetrics.

MAURICE I. SMITH, B.S., M.D., Instructor in Pharmacology.

GRADY E. CLAY, B.S., M.D., Instructor in Ophthalmology.

JOSEPH A. ELLIOTT, A.B., M.D., Instructor in Dermatology and Syphilology.

C. H. LAWS, M.D., Instructor in Pediatrics.

ROY A. MCGARRY, M.D., Instructor in Dermatology.

HARRY M. MALEJAN, A.B., M.D., Instructor in Surgery.

HAROLD DE BLOIS BARSS, A.B., M.D., Instructor in Orthopedic and Genito-Urinary Surgery.

ADELINE GURD, Instructor in Psychiatry.

WILLIAM R. VIS, B.S., M.D., Instructor in Internal Medicine.

FRED C. CURRIER, B.S., M.D., Instructor in Internal Medicine.

MAX PEET, A.M., M.D., Instructor in Surgery.

THEOPHIL KLINGMANN, Ph.C., M.D., Demonstrator of Diseases of Nervous System.

LAURA M. DAVIS, R.N., Demonstrator of Anæsthesia.

ALBERT C. FURSTENBURG, B.S., M.D., Demonstrator of Oto-Laryngology.

HERBERT WILLIAM EMERSON, B.S., M.D., Assistant in Hygiene, in charge of Pasteur Institute.

THEOPHILE RAPHAEL, A.B., A.M., Assistant in Physiology and Pharmacology.

WASHINGTON P. STOWE, B.S., Assistant in Physiology.

JAMES M. STANTON, Assistant in Physiology.

ROBERT R. DIETERLE, Assistant in Pathology.

LOUIS W. GERSTNER, Technical Assistant in Pathology.

GOVIND U. ANKLIKER, M.C., P.S., Technical Assistant in Histology.

WILLIAM LEVIN, A.B., M.S.P.H., Assistant in Hygiene, in charge of Water Analysis.

JOHN S. CHAMBERS, M.S., Assistant in the Pasteur Institute.

AVERY D. PRANGEN, B.S., M.D., Assistant in Ophthalmology.

WILLIAM MCKEE GERMAN, A.B., M.S., Assistant in Bacteriology.

ARNOLD HENRY EGGERTH, A.M., Assistant in Bacteriology.

PAUL H. PIPER, B.S., Assistant in Physiological Chemistry.

SOBEI IDE, M.D., Assistant in Psychiatry and Serologist to University and Psychopathic Hospitals.

BESSIE AGNEW PARSONS, Assistant in Roentgenology.

BERYL I. BURNS, A.B., Assistant in Anatomy.

LYNN ARTHUR HOAG, B.S., Assistant in Anatomy.

HARRY LEROY CLARK, A.B., Assistant in Anatomy.

HELEN L. B. GAGE, Assistant in Anatomy.

WILLIAM K. McCANDLISS, A.B., Assistant in Anatomy.

HERBERT A. JUDSON, A.B., Assistant in Anatomy.

ROBERT A. HALE, M.D., Assistant in Psychiatry.

NED R. SMITH, A.M., Assistant in Hygiene.



---

N. S. HARDIKAR, M.D., Assistant in Hygiene.

E. ROGERS SMITH, A.B., Assistant in Pharmacology.

WILLIAM H. GORDON, B.S., M.D., House Physician in the University Hospital.

ROBERT J. SNIDER, JR., B.S., M.D., Intern in Internal Medicine.

WALTER F. WATTON, B.S., M.D., Intern in Pediatrics.

CARL CLEGHORN WARDEN, Ph.B. M.D., Holder of Beach Scholarship in Bacteriology.

\*HAROLD S. HULBERT, M.D., Assistant in Psychiatry.

EZRA E. KOEBBE, B.S., M.D., Assistant in Pediatrics.

THEODORE L. SQUIER, Laboratory Assistant in Clinical Medicine.

EVAN G. GALBRAITH, B.S., M.D., Intern in Oto-Laryngology.

HAROLD HENDERSON, B.S., M.D., Resident Obstetrician and Gynecologist.

ROBERT H. BAKER, A.B., M.D., Intern in Surgery.

LOWELL L. YOUNGQUIST, B.S., M.D., Intern in Surgery.

ROLLAN W. KRAFT, B.S., M.D., Clinical Demonstrator of Surgery.

MORTON E. BROWNELL, B.S., M.D., Intern in Ophthalmology.

LYLE B. KINGERY, B.S. M.D., Resident in Dermatology and Syphilology.

WILLIAM S. GONNE, B.S., Intern in Neurology.

LOUIS D. STERN, A.B., M.D., Intern in Internal Medicine.

EDWIN R. SCARBORO, A.B., Intern in Surgery.

LEONORE DRAPER, Laboratory Assistant in Psychopathic Hospital.

BURR F. ANDERSON, Technical Assistant in Roentgenology.

---

\* Resigned January 1, 1917.

FLORENCE BUCKLEY, Assistant in Serology.

GEORGE LUTZ, JR., Accountant and Laboratory Assistant in Hygiene and Physiological Chemistry.

JAMES P. BRIGGS, Ph.C., Pharmacist in University Hospital.

ROBERT GEORGE GREVE, Superintendent of University Hospital.

FANTINE PEMBERTON, R.N., Superintendent of Training School for Nurses.

C. W. EDMUNDS, SECRETARY.

VICTOR C. VAUGHAN, DEAN.

Letters of inquiry should be addressed to Dr. C. W. EDMUNDS, Secretary of the University of Michigan Medical School, Ann Arbor, Michigan.

# University of Michigan

## Medical School

---

The Medical School was the first professional school established in the University. Provision was made for it in the legislative act by which the University was organized in 1837, and it was opened for students in 1850.

During the first and second decades of the existence of this school, the annual course of lectures was begun on the first Wednesday in October, and continued until the third Wednesday in April. The candidate for a degree was required to have attended two full courses of lectures, and to have spent one year with a practitioner. In 1877 the curriculum was extended to two years of nine months each, and in 1880 three years of study of nine months each became necessary before a candidate could present himself for final examination. In 1890 the compulsory term of study was extended to four years of nine months each. The three years' curriculum of nine months each allowed a graded curriculum to be established, and the addition of a fourth year permitted further gradation, and gave opportunity for extending laboratory teaching. The main features of the curriculum in operation since 1890, have been sequence and concentration in the subjects presented, abundant laboratory teaching, and general survey of each branch by means of lectures, recitations, and demonstrations. A combined curriculum in science and medicine has been provided, and graduate courses are offered.

The qualifications required for admission were for many years essentially the same as those found in the first announcement. These were a good English education, a knowledge of natural philosophy and of elementary and mathematical sciences, and an acquaintance with Latin and Greek. Greek was dropped from the list of entrance requirements in 1859. In 1890 the requirements for admission were advanced to a diploma from the classical or Latin course of an approved high school. This was modified in 1896 by requiring, instead of a classical or Latin diploma, a certificate of having passed certain prescribed subjects. This list embraced a good knowledge of English, mathematics through geometry, general and American history, physics and chemistry, botany and zoölogy or biology, and Latin grammar and Cæsar. To this list were added (1901) plane trigonometry and a reading knowledge of either German or French, and in order to meet the entrance requirements in the sciences named, the entering student was required to present a certificate showing that the courses pursued were accompanied by laboratory work. In October, 1909, the requirements for admission were advanced to a minimum requirement of two years of collegiate work, the equivalent of 60 hours of credit in the College of Literature, Science, and the Arts of this University. The credentials presented must include a year of collegiate work in Biology, in Chemistry, and in Physics, and two years of either French or German.

INSTRUCTION FOR WOMEN.—The course of instruction for women is in all respects equal to that for men. In the lectures, in public clinics, in the several laboratories, and in the various class exercises, it is found that both sexes may attend with propriety at the same time.

## THE MEDICAL BUILDING

A laboratory building, consisting of high basement and three stories, thoroughly modern in appointment and equipment, was completed during the year 1902. In this building are accommodated the departments of hygiene, bacteriology, physiological chemistry, pathology, anatomy, histology and embryology. It contains, further, two large amphitheaters and two recitation rooms, a faculty room and the offices of the Dean and Secretary.

The rooms allotted to each department accommodated in this building include one general laboratory for elementary work, accommodating respectively forty to sixty students, smaller rooms for heads of the departments, rooms for assistants, advanced, special and research students and for departmental libraries.

The departments of physiology and pharmacology have been provided for in the north wing of the building vacated by the department of chemistry. This building has been entirely rebuilt and refurnished, and in addition to the large laboratories for general student use there are also smaller rooms for the accommodation of assistants and research students.

## THE UNIVERSITY HOSPITAL

The University Hospital with its 460 beds including the Psychopathic Hospital, is one of the largest teaching hospitals in the country. From a small beginning in 1869, when a large dwelling house situated on the campus was converted into a 20-bed hospital, it has had a steady growth, each year taxing the resources of the institution to the utmost to care for the large number of patients applying for admission. This in spite of the fact that in consideration of free treatment patients are admitted to the

Hospital with the understanding that they are to be utilized freely for clinical instruction. With no private patients, each bed being used for teaching purposes, the hospital furnishes abundant and varied material for the instruction of third and fourth year students. That patients, as well as students, are benefited by such instruction is evidenced by the increasing number seeking admission and treatment each year.

From its very beginning the hospital has been owned by the University, and governed by the Board of Regents, under the direct supervision of the Medical faculty. Thus the primary object of the hospital, the teaching of medical students, has never been lost sight of, and has been developed to a high degree. Within reasonable limits, the student is thus able to come in close contact with the patients, so that he acquires a first-hand and not an amphitheatre knowledge of disease.

### **HOSPITAL BUILDINGS**

The hospital buildings are situated on a plot of ground of approximately sixteen acres situated within a short walk from the University campus. Placed high up on a bluff overlooking the Huron valley, the hospital group is ideally located, so far as pure air and sunshine are concerned. The main buildings are of the two-story pavilion type, connected by glass corridors. Running north and south, with sun parlors at the southern exposures, the wards are always provided with sunlight, hence bright and cheerful.

### **THE MEDICAL PAVILION**

This building is situated on the west side of the hospital plot, and provides accommodation for patients with general medical diseases, those suffering from nervous disorders, and those with diseases of the skin and syph-



ilis. Each department is provided with a clinical laboratory especially equipped for the scientific examination of cases. The building is also provided with an amphitheatre equipped with a stereopticon, in which are held the clinics on internal medicine, neurology, and dermatology.

### **THE PALMER WARD**

Just east of the medical pavilion is the Palmer Ward. This building was erected from funds left by Dr. Alonzo Palmer, for many years Professor of Internal Medicine. It is devoted exclusively to the care of children with medical and surgical ailments. In the clinical laboratory connected with this department, the students are thoroughly taught the different methods of infant feeding.

In the basement of this building is situated the X-Ray department, well equipped for diagnosis and therapy. This department is also supplied with an excellent photographic outfit utilized by all departments in the hospital for the recording of rare lesions.

### **ORTHOPEDIC WARD**

In 1916 an Orthopedic Ward of 30 beds was added to the Hospital to care for the increasing number of state and county patients referred for diagnosis and treatment. This new ward, situated on the upper floor of what was formerly the nurses' home, is modern in every respect and provides every facility for the study and treatment of diseases of the bones and joints and especially the deformities of young children. In conjunction with the Palmer Ward for Children it furnishes clinical material in many respects unsurpassed for the instruction in the medical and surgical diseases of children.

On the lower floor of this building is the main dining room for the intern staff and the 140 pupil nurses of the training school with its staff of twenty instructors.

### THE SURGICAL PAVILION

This building, situated east of the Palmer Ward, is especially arranged for the care of general surgical and gynecological patients. It is provided with a large surgical operating amphitheatre with three smaller operating rooms. The surgical and gynecological departments are each provided with a clinical laboratory, extensively utilized in the teaching of clinical laboratory methods to small sections of students.

In this building are also located the offices of the admitting physician and medical director, the pharmacy and store rooms.

### ADMINISTRATION BUILDING

The office building is situated between the Surgical Pavilion and the Psychopathic Ward. Erected in 1896 as a more or less temporary structure with the idea of enlarging it within a short time, the original building still remains, so great have been the demands for more hospital beds to care for the ever-increasing number of patients seeking admission to the hospital. However, plans are under way to secure at no distant date an adequate and commodious administration building.

### PSYCHOPATHIC HOSPITAL

East of the office building is situated the State Psychopathic Hospital, with 60 beds, which is so closely affiliated with the University Hospital as to be in reality a part of it. It has the proud distinction of being the first state hospital to be established for the treatment of patients suffering from the acute forms of insanity, curable by isolation and treatment. Equipped with excellent laboratories, with an abundance of pathological material from the state asylums, it furnishes unexcelled facilities for the study of psychiatry.

### **EYE, EAR, NOSE, AND THROAT PAVILION**

This building with its four floors, situated immediately north of the surgical pavilion, is devoted entirely to patients with diseases of the eye, ear, nose, and throat. Thoroughly modern in every respect, it is especially adapted to the treatment of the patients admitted to these departments. On the top floor is a contagious unit, making it possible to isolate patients developing contagious diseases of the nose and throat. These clinics are especially large and varied, and suitable for familiarizing the student with the more common diseases of the eye, ear, nose, and throat.

### **MATERNITY COTTAGE AND HOSPITAL**

Directly back of the Medical Pavilion are two frame buildings used temporarily for maternity patients. Since these patients are received during all stages of pregnancy at nominal fees, abundant demonstration material is provided for the junior and senior classes. The patients are confined in the maternity hospital by senior students under the direct supervision of the instructors. In addition, abundant opportunities are afforded the students for studying the post partum patient and the young infant.

### **CONTAGIOUS PAVILION**

A twenty-four-bed contagious hospital has been erected east and north of the Psychopathic Ward. This building is a gift from the city of Ann Arbor conditioned upon the University's promising the site and equipment for the hospital and caring for the city's contagious patients at the regular hospital charges for such cases. The hospital is modern in every respect and has been planned so that the student may be safely taught to recognize and treat the commoner contagious diseases.

### INTERN HOME

Post-graduate instruction is provided on the different hospital services for nine physicians who usually remain one year after graduation. In 1912 the intern home was erected just north of the administration building. Provided with comfortable bed rooms, lounging room, shower baths, and sleeping porch, this building admirably serves the purpose for which it was erected.

### HOSPITAL EQUIPMENT

In 1912 a modern kitchen was installed at an expense of several thousand dollars. This main kitchen, with the adjacent diet kitchens, together with the ward diet kitchens, has revolutionized the food service of the hospital, and added greatly to the latter's popularity.

Of especial importance is the system of keeping accurate and copious hospital records and notes, rendered possible by having a stenographer for each department.

The different hospital divisions are liberally equipped with necessary teaching apparatus, which is added to or changed as occasion may demand.

In conclusion it may be stated that the University Hospital is unique among hospitals connected with or owned by medical schools. Although situated in a small town, the people of the state for over fifty years have looked to their state University for medical advice, with the result that a large hospital, its size only limited by its available beds, has been built up in connection with the medical school. This has enabled the medical faculty to carry out the fundamental principle which has dominated clinical teaching in the school from its very beginning, individual instruction, first-hand knowledge of the patient, and a thorough study of cases.

### TRAINING SCHOOL FOR NURSES

The University Training School for Nurses was established in 1891 and has grown with the expansion of the Hospital until now it numbers 140 nurses in training. The Superintendent of Nurses, her four assistants, three clinic nurses, and nine ward supervisors constitute the administrative staff. Students are admitted to the school upon the same terms as to the Department of Literature, Science, and the Arts of the University and diplomas are granted by the Board of Regents at the completion of three years only after efficiency has been proven by class and ward work and by examination.

### MEDICAL LIBRARY

The Medical Library of the College of Medicine and Surgery of the University of Michigan now numbers 30,000 volumes. Three hundred seventy-two of the best current medical journals in English, French, German and Italian are regularly taken. The Library is essentially one of medical reference and is a very complete reference library for modern medicine. The volumes contained in it give practically the complete evolution of modern pathology, experimental physiology and pharmacology, bacteriology, serology, immunology, practical hygiene and experimental medicine of the last hundred years. In addition to the volumes contained in this library there is a large amount of medical material available in other departmental libraries and in the General Library. Were the entire medical material of all the libraries belonging to the University collected into one library the medical collection of the University of Michigan would rank sixth in size and importance among the libraries of the United States. As it is at present, it holds a rank of the most important reference medical library directly connected with any medical school.



## UNIVERSITY YEAR

The academic year extends from the Tuesday preceding the first Thursday in October to the last Thursday in June, except in years preceding leap-years, when it begins upon the Tuesday next preceding the first Wednesday in October. The lectures continue until the middle of June. The examinations are then begun, and concluded in time for the Commencement exercises.

## REQUIREMENTS FOR ADMISSION

The following will be admitted to the University of Michigan Medical School, as candidates for the degree of Doctor of Medicine.\*

I. Graduates of the College of Literature, Science, and the Arts of this University, or of collegiate departments of other universities, or of approved colleges and scientific schools, provided they show evidence of having an acquaintance with Latin, and a fair reading knowledge of German or French, and can present credentials showing that they have had a year of collegiate work in Biology, (Zoölogy and Botany), Chemistry (including Organic Chemistry), and Physics (including laboratory). Applicants holding post-graduate degrees, namely, A.M., M.S., Ph.D., and D.Sc., are subject to the same regulations.

II. Students registered on the combined curriculum in collegiate and medical studies offered in this University, and who have followed this course as outlined, may enroll in the Medical School after having obtained 67 hours (B.S. and M.D. degrees) in the College of Literature, Science, and the Arts, or 90 hours (A.B. and M.D. degrees), if they meet the other requirements. (See combined courses in collegiate and medical studies.)

III. Matriculate candidates for the bachelor's degree in the College of Literature, Science, and the Arts of this University, or in the collegiate department of other universities and in approved colleges and scientific schools, who can present evidence of being graduates of an approved high school, and in addition thereto can bring from the Dean of the College of Literature, Science, and the

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\* For particulars regarding admission to courses leading to degree of Doctor of Public Health and Master of Science in Public Health see page 76.



Arts of this University a statement showing that they have completed the equivalent of 2 years in that college, will be admitted in case their credentials show an acquaintance with Latin and a fair reading knowledge of either German or French, and a year of collegiate work in Biology (Zoölogy and Botany), Physics (including laboratory), and Chemistry, including Organic Chemistry.

*No student therefore will be admitted to the school who has not completed two years of college work, in addition to graduating from an approved High School, or its equivalent.*

In order to meet the requirements in Latin the applicant should have studied the language for two years and should have covered Latin Grammar, and at least four books of Cæsar or their equivalent.

The requirement in German or French is met by two years of school work, for one not born to the language, but at least one year of the modern foreign language must have been taken in college.

*Unless the applicant meets in full the entrance requirements in Chemistry he will not be able to carry the full work of the freshman year.*

## COMBINED CURRICULUM OF LETTERS AND MEDICINE

Students desiring to obtain the degree of Bachelor of Arts in the College of Literature, Science, and the Arts, and of Doctor of Medicine in the Medical School, may, by enrolling on the combined Curriculum of Letters and Medicine, shorten from eight years to seven the time required to earn the two degrees. This privilege is open only to students who throughout their course maintain a uniform record of good scholarship. The work is under the direction of a Committee<sup>1</sup> of five members representing the College of Literature, Science, and the Arts and the Medical School. With the consent of the Committee in charge, a candidate for the degree of Bachelor of Arts, who has been a student in the College of Literature, Science, and the Arts for at least one year, and has 90 or

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<sup>1</sup> This committee is composed of the following members: Dean John R. Effinger, Registrar Hall and Professor Arthur G. Canfield, of the College of Literature, Science and the Arts, and Professors Frederick G. Novy and C. W. Edmunds, of the Medical School.

more hours to his credit, of which at least 30 hours have been earned in the College of Literature, Science, and the Arts in this University, may enroll upon the combined Curriculum; that is, while continuing his registration in this College he may also register in the Medical School, provided the work he has already completed includes a sufficient number of the courses enumerated below to enable him to complete within one year the specified requirements described below.

All students who desire to enter upon the Combined Curriculum of Letters and Medicine must, before May 15 of the year preceding double registration, file with the Registrar of the College of Literature, Science, and the Arts, upon a blank to be obtained from him, a petition to be granted that privilege.

When the student so registered on the Combined Curriculum has completed the first year of the Curriculum in Medicine, and not less than 90 hours in the College of Literature, Science, and the Arts, he will be recommended for the degree of Bachelor of Arts, provided he has completed the requirements for graduation from the latter College, and provided his work has included the following courses:

Rhetoric, 6 hours, including Courses 1 and 2.

French and German, 16 hours of either one, and 8 hours of the other.

English, 6 hours.

Psychology, 6 hours.

Physics, 10 hours, including two hours laboratory work.

Chemistry, General, Qualitative Analysis, and Organic, 12 hours for students presenting Chemistry for entrance, otherwise 16 hours.

Physical Chemistry, 4 hours.

Botany, 4 hours.

Zoölogy, 10 hours.

Total, 82 or 86 hours.

Suggested electives: Latin or Elementary Greek, 8 hours; History, or Political Economy, or Philosophy, 8 hours; Organic Chemistry, 5 hours.

Students who so desire, may obtain the degrees of Bachelor of Science in Medicine and Doctor of Medicine in six years and one or two summer sessions (as may be necessary) by complying with the requirements above set forth, except that they must complete the first and second years of the curriculum in Medicine and that the credit required from the College of Literature, Science, and the Arts shall be 75 hours (of which at least 67 hours must be completed before the student enrolls upon the combined curriculum and the remaining 8 hours may be gained any time before the B.S. degree is granted). The 67 hours mentioned above, shall include the following courses:

Rhetoric, 6 hours, including Courses 1 and 2.

French or German, 16 hours.

Physics, 10 hours, including two hours of laboratory work.

Chemistry, General, Qualitative Analysis, and Organic, 12 hours  
for students presenting Chemistry for entrance, otherwise  
16 hours.

Botany, 4 hours.

Zoölogy, 4 hours.

Total, 50 or 54 hours.

Electives are suggested from the courses before mentioned.

In order to meet exceptional cases, the Committee shall have power to adjust the foregoing requirements by allowing substantial equivalents.

In addition to the seven-year Combined Curriculum which is in force between the Medical School and the College of Literature, Science, and the Arts, of this University, the Board of Regents has approved similar arrangements with certain other colleges, namely, Albion College at Albion, Michigan; Olivet College at Olivet, Michigan; Earlham College at Richmond, Indiana; Ohio Wesleyan University at Delaware, Ohio; and Hillsdale

College at Hillsdale, Michigan. The arrangement is that the student shall spend three years, in any one of the colleges named, and shall include in his course the subjects which are required for admission to this School. He then is admitted to the University of Michigan Medical School upon a certificate from the college, and after having satisfactorily completed the work of the first year in medicine he returns to his college which confers the degree of A.B. upon him. In addition to these formal affiliations which have been approved by the Board of Regents, there are several other colleges which send their students after three years of work to this School, and which in like manner confer the A.B. after the completion of the first year in medicine. In the latter cases, however, no formal affiliation has been carried out up to the present time.

### **ADMISSION TO ADVANCED STANDING**

The applicant must have studied as a matriculated medical student in an approved medical school for a period of time at least equal to that already spent by the class which he seeks to enter. He must present credentials showing that he meets in full the entrance requirements as herein set forth, and must furnish evidence showing that he has satisfactorily completed courses equivalent in amount and character to those given in this school, in the year or years preceding that to which he seeks admission, and must pass examinations at the beginning of the session in all the subjects that have already been pursued by the class which he desires to enter. Certificates of standing should be presented, but these cannot be accepted in place of these examinations.

## COURSES OF INSTRUCTION\*

The course of instruction covers four college years of nine months each. The first two years are devoted to the more strictly scientific work, which serves as a basis for the technical and clinical studies which follow. Medicine consists of the application of those facts gathered from the various sciences, which can be utilized in the preservation or restoration of health. These facts must be known before their application can be intelligently practiced. Knowledge is gained from one's personal observation, or is communicated from one to another. The former is positive knowledge, while the latter may be designated as hearsay. The medical student acquires the positive knowledge in the laboratory, in the ward and autopsy room, while he must depend for much of his information upon lectures and text-books. It is the aim of this school to give its students all the positive knowledge possible, and, with this in view, great stress is laid upon laboratory instruction in anatomy, histology, embryology, physiology, physiological chemistry, hygiene, bacteriology, pathology, pharmacology, and in the several clinical laboratories. Facts obtained in the study of these sciences make up the medical man's equipment. Without this knowledge he is constantly crippled in his work, and these facts can be satisfactorily obtained only in the laboratory. The same objective method of teaching is carried into the clinical work, as will be seen from the general outline of the courses given further on.

During the first year the greater part of the day is devoted to laboratory work, during the remaining years the mornings are devoted mainly to lectures and recita-

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\* For course leading to degree of Doctor of Public Health see page 76.



tions and the afternoons to laboratory drills, the study of methods of diagnosis and means of treatment and clinical work.

### **ANATOMY**

HUMAN GROSS ANATOMY, HISTOLOGY, EMBRYOLOGY, ANATOMY OF NERVOUS SYSTEM.

PROFESSOR G. CARL HUBER, M.D.

PROFESSOR ROLLO E. McCOTTER, M.D.

CYRENUS G. DARLING, M.D., Lecturer on Surgical Anatomy.

STACY RUFUS GUILD, A.M., Instructor in Anatomy.

JOHN LOCKE WORCESTER, M.D., Instructor in Anatomy.

WAYNE J. ATWELL, A.M., Instructor in Anatomy.

RAYMOND F. WAFER, M.D., Instructor in Anatomy.

HARRY L. CLARK, A.B., Assistant in Anatomy.

BERYL ILES BURNS, A.B., Assistant in Anatomy.

LYNN ARTHUR HOAG, B.S., Assistant in Anatomy.

HELEN L. B. GAGE, Assistant in Anatomy.

EMORY W. SINK, A.M., Assistant in Anatomy.

WILLIAM K. McCANDLISS, A.B., Assistant Demonstrator of Anatomy.

HERBERT A. JUDSON, A.B., Assistant Demonstrator of Anatomy.

GOVIND U. ANKLIKER, M.S.P.H., Technical Assistant.

The Anatomic Laboratories are situated in the basement and second and third floors of the east half of the Medical Building, and include laboratories for gross anatomy, histology and embryology, anatomy of the nervous system, laboratory rooms for research, a lecture room, a teaching museum, a projection and photographic room, and a refrigerating plant.

### **LABORATORY FOR GROSS ANATOMY**

The Laboratory for Gross Anatomy is situated on the third floor of the medical building, and contains six well-lighted and well ventilated dissecting rooms, in addition to other rooms available for advanced work and research.

The State law provides the University with an abundant supply of anatomical material which is preserved by suitable methods and stored in a cold storage vault. The work of the students is facilitated by an osteological loan collection, from which prepared sets, comprising the half skeleton, are loaned to students for their use during the dissection.

### **LABORATORY OF HISTOLOGY AND EMBRYOLOGY**

The histological laboratory is on the second and third floors of the medical building. It provides facilities both for elementary and for advanced work in histology, histogenesis, and embryology, and the

anatomy of the nervous system. There are large general laboratories for the elementary work in histology and embryology, and smaller rooms for the elementary and advanced work in histology and vertebrate histology and embryology. Suitable provision is made for students and graduates who desire to engage in the work of research, for which purpose separate rooms have been equipped. The laboratory equipment includes the apparatus and instruments needed for conducting the elementary work in histology and embryology, and for special research. An excellent collection of the Ziegler embryological models and of models of various glands and other minute anatomic structures made after the Born method of wax plate reconstruction and of corrosion preparations facilitates the work of instruction in the courses of histology and embryology. The laboratory is provided with a projection apparatus, freely used for demonstrating the microscopical preparations to be studied each day. The laboratory possesses about 60 human embryos representing various stages of development and cut in serial sections, to which constant additions are being made, many series of mammalian embryos, a complete series of the human brain stem stained after Weigert's method, complete series of selected vertebrate brains, and extensive series of "silver" preparations, all of which are freely used for demonstration purposes and for special investigations.

### **MUSEUM OF ANATOMY**

The museums of the late Professors Ford and Sager, including several thousand specimens, the result of many years' labor in collecting and preparing material intended to aid directly in teaching, are now the property of the University and are used in the daily work of the class-room. Other preparations are constantly being added, and the museum now contains a valuable collection of bones, illustrating abnormal as well as normal conditions, and the various changes that occur from infancy to old age; dissections, general and partial, of the vascular, nervous and muscular systems; series of sections made of frozen bodies; preparations illustrative of visceral and other anomalies; models of various organs and portions of the body in wax, papier-mache and plaster, and preparations and models illustrating the phenomena of human and comparative embryology and neurology.

The collection contained in the University Museum and the valuable osteological and odontological collections in the museum of the College of Dental Surgery are also open to the inspection of students.

### **COURSES OF INSTRUCTION**

The instruction in gross human anatomy is so arranged that the required work in this subject for the degree of Doctor of Medicine is completed during the first year of the medical course. A systematic study of the gross structure of the entire body is pro-



vided for. Students beginning October 1 complete the courses in dissection by the end of March. After the Easter recess a course of eight weeks is offered, supplementary to the course of dissection, for the special study of regional and topographical anatomy, in which emphasis is laid upon those features of anatomy having direct application to the practice of medicine and surgery. In this course series of cross and sagittal section of frozen bodies, both male and female, are freely used.

A separate course in dissection is provided for students in dentistry.

The instruction in embryology, histogenesis, general histology and organology, including the gross and microscopic anatomy of the nervous system and special sense organs required for the degree of Doctor of Medicine is completed during the first year of the medical curriculum. The work begins during the first week in October and ends the first week in March, the forenoons of this period being given to it. Opportunity is given students who have completed the required work to acquire proficiency in histological and embryological technique, methods of reconstruction and corrosion, and when qualified, to take up advanced studies and special problems in histology and embryology and in the development and structure of the nervous system.

A separate course in histology and embryology is provided for students in dentistry.

#### COURSES

Course 1. *Systematic Courses in Gross Human Anatomy.* This course is repeated in periods of about eight weeks each. October to November, December to January, February to March. Daily, afternoons, 1:00 to 5:30. Professor MCCOTTER, Dr. WORCESTER, Mr. ATWELL, and Assistants.

Course 1a. *Systematic Course in the Anatomy of the Extremities.*

During this course the student makes a complete dissection of the arm and leg, together with the structures by which they are attached to the trunk. By dissecting the extremities in the same period the morphological analogies between the two are emphasized. Prepared bones of the arms and leg are loaned to each student and are to be kept throughout the course so that he may familiarize himself with the osteological features of the parts under consideration during their dissection.

Course 1b. *Systematic Course in the Anatomy of the Pelvis and Abdomen.*

During this course, in addition to the complete study of the abdominal viscera and genito-urinary organs, the student dissects the abdominal walls, the long muscles of the back and the spinal cord. During the same time the bony framework of the trunk and pelvis is studied from prepared bones loaned for this purpose.

Course 1c. *Systematic Course in the Anatomy of the Head, Neck and Thorax.*

During this course the student dissects the thoracic viscera, the neck and the entire head with the exception of the brain. The study of the latter is provided for in the course in Anatomy of the Nervous System. The student during this course is expected to familiarize himself with the anatomy of the bones of the skull.

In each of these courses the dissections of the students are carried on under the guidance of members of the staff. Anomalies and variations are recorded by means of drawings. Daily conferences are held with sections of the class. These consist of daily recitations and reviews of the more important features of the dissections and the embryological and morphological significance of the different structures met with.

Course 2. *Embryology, Histogenesis, General Histology, Organology, and Anatomy of the Special Sense Organs and Nervous System.*

Lectures, recitations and laboratory work. Daily, 8:00 to 12:00, Saturday included, October to end of February. Professor HUBER, Mr. GUILD, Dr. WAFER, and assistants.

This course consists of lectures, recitations and laboratory work, free use being made of the projection microscope for demonstration of histological and embryological preparations. Each portion of the work, as taken up from day to day, is introduced by a general discussion, illustrated by blackboard drawings, and as far as possible by demonstrations of microscopic sections by means of the projection lantern. Conferences and recitations are held at the end of the laboratory period. It is the aim throughout the course to interpret the adult structure of elementary tissues and organs through their development and histogenesis.

The following general plan is followed:

Course 2a. *General Embryology, General Histology and Histogenesis, and Structure of the Elementary Tissues.* Six weeks. The course begins with the study of the cell, cell division and maturation and fertilization of the sex-cells, and the fundamental principles of inheritance. This is followed by a consideration of segmentation and the formation of the germ layers, and the development is traced to the anlagen of the various tissues and organs, emphasis being given to their derivation from the several germ layers. The course concludes with a consideration of the histogenesis and structure of the elementary tissues.

Course 2b. *Organology.* Six weeks. During this period are considered the various organs exclusive of the central nervous system and the organs of the special senses. The study of the adult structures of each organ is preceded by a consideration of its development and histogenesis.

Course 2c. *Gross and Minute Anatomy of the Central Nervous System and Organs of Special Senses*. Six weeks. It includes a complete dissection of the human brain, a consideration of the development of the nervous system and sense organs, illustrated by charts, models and serial sections, and a study of a series of Weigert preparations of the brain, brain stem and cord, and of silver preparations of the central and peripheral nervous system, followed by a consideration of the structure of the organs of the special senses. Special consideration is given to the more important motor, sensory and association fiber paths.

Course 3. *Lectures, Recitations and Dissections in Human Anatomy for Dental Students*. Twelve weeks. March to May. Daily 1:00 to 5:00. Dr. WORCESTER and assistants.

This course is designed for dental students and is required during their first year. It consists in dissections, lectures, demonstrations and quizzes. In addition to the consideration of the bony framework of the body, there are studied the essential features in the anatomy of the soft parts of the head and neck, the thoracic and abdominal viscera and the central nervous system.

Course 4. *Lectures, Recitations, and Laboratory Work in Embryology and Histology for Dental Students*. Twelve weeks. March to June. Two sections, each working three half days a week, 1:00 to 5:00, and Saturday, 8:00 to 12:00. Professor HUBER, Mr. GUILD, Dr. WAFER, and assistants.

This course is required of Dental students. The course consists of lectures, recitations, demonstrations, and laboratory work. It embraces a consideration of the structure of a cell, cell mitosis, and histogenesis of the structure of the elementary tissues and of the organs of secretion and excretion, of digestion and respiration, and in the latter portion of the course especial attention is given to development and structure of the oral and nasal cavities, the teeth and periodontal tissues.

Course 5. *Regional and Topographic Anatomy, Based on Frozen Sections, Lectures and Recitations in which are correlated Developmental, Microscopic and Gross Anatomy*. Eight weeks. April to June. 8:00 to 11:00 daily. Professors HUBER and McCOTTER, Mr. ATWELL, and assistants.

This course is designed to correlate the courses in developmental, microscopic and gross anatomy and to cover those features in anatomy that have direct application to the practice of medicine and surgery. It embraces bony landmarks, the surface outlines of organs and the location of various nerves and arteries; the distribution of lymphatic vessels and glands; the special anatomy of joints; the character of synovial membranes, sheaths and bursæ; fascial compartments; the position and relation of

the abdominal and thoracic viscera with regard to diagnostic and operative procedures; and attention is also given to special points in the anatomy of the head and cerebral localization. The instruction consists in laboratory work, demonstrations and quizzes, large use being made of frozen sections and special dissections. During this course each student prepares a set of about 40 tracings made from frozen sections, showing the outline and relations of the principal structures of the body.

Course 6. *Surgical and Applied Anatomy*. Second semester. One hour. Professor DARLING.

This course consists of lectures and demonstrations, and is primarily intended to aid students in their preparation for the practice of surgery. See Surgery.

#### OPTIONAL COURSES AND COURSES LEADING TO ORIGINAL RESEARCH.

In addition to the above enumerated courses the Department of Anatomy offers the following courses designed for such as may desire advanced work, prepare for research and engage in original investigation. Graduates in Medicine who may desire special courses in the dissection of certain regions of the body or special courses in histology, embryology and anatomy of the nervous system are admitted as graduate students and their work will be arranged to meet their special needs. Students with Biological Training, not candidates for the Degree of Medicine, are admitted to elementary and advanced courses. Undergraduates in Medicine who are qualified will be given opportunity to pursue special courses and undertake original investigations. These courses are open to students in the Graduate School and may be elected with credit toward Master's and Doctor's Degrees.

Course 7. *Anatomy of Special Regions*. Open to Graduates in Medicine and Undergraduates who have completed Courses 1 and 5. Hours to be arranged with Instructor in charge, Professor McCOTTER. Special dissections of certain regions of the body as preparation for Medical Specialties. If time permits the developmental and microscopic anatomy of the part studied may also be undertaken.

Course 8. *Histology and Embryological Technique*. Professor HUBER and assistants.

This course is intended as an introduction to the technical methods used in Histology and Embryology. The methods of fixation, embedding, section cutting, staining, wax reconstruction and microscopic drawing are taken up in a practical way.

Course 9. *Advance Course in Mammalian Embryology, Histogenesis, and Histology*. Professor HUBER.

Intended as a preparation for research work. Assigned reading and laboratory work.

Course 10. *Comparative Vertebrate Neurology*. Professor McCOTTER. Includes a study of the morphology and fiber paths of type vertebrate brains as shown in myelin-stained serial sections. Series of sections of brains of the frog, turtle, bird and white rat and guinea pig are available for study.

Course 11. *Advance Course in the Development and Microscopic Anatomy of the Central and Peripheral Nervous System, Human and Comparative*. Professor HUBER.

Course 12. *Research in Vertebrate Histology, Embryology, Anatomy of the Nervous System, Gross Anatomy, Human and Comparative*. Professor HUBER and McCOTTER.

Applicants possessing the necessary preliminary training are given every opportunity to pursue research work. The student is expected to devote at least half the day throughout one semester to this work. Laboratory work with reading.

## HYGIENE, BACTERIOLOGY, AND PHYSIOLOGICAL CHEMISTRY

PROFESSOR V. C. VAUGHAN, M.D., LL.D.

PROFESSOR F. G. NOVY, Sc.D., M.D.

PAUL H. DE KRUIF, Ph.D., Assistant Professor of Bacteriology.  
HERBERT WILLIAM EMERSON, B.S., (Ph.), M.D., Assistant  
in Hygiene, in Charge of the Pasteur Institute.

PAUL HENRY PIPER, B.S., Assistant in Physiological Chemistry.  
WILLIAM LEVIN, A.B., M.S., Assistant in Hygiene, in Charge  
of Water Analysis.

ARNOLD HENRY EGGERTH, A.B., M.A., Assistant in Bacteriology.

WILLIAM MCKEE GERMAN, A.B., M.S., Assistant in Bacteriology.

JOHN SHARPE CHAMBERS, M.S., Assistant in the Pasteur Institute.

NED RUDOLPH SMITH, A.M., Assistant in Hygiene.

NARAYAN SUBRAO HARDIKAR, Assistant in Hygiene.

GEORGE LUTZ, JR., Accountant and Laboratory Attendant in the  
Departments of Hygiene, Bacteriology, Physiological Chemistry,  
and Pasteur Institute.

## HYGIENIC LABORATORY

The hygienic laboratory was established by a special appropriation of the legislature of 1887, and was opened for work in January, 1889. The objects had in view in the establishment of this laboratory were as follows: (1) Original research as to the causation of disease; (2) sanitary examination of food and drink; (3) instruction of students. The laboratory is now in more commodious quarters in the new laboratory building, and the facilities for original research have



been enlarged. Special rooms have been fitted up for the chemical, microscopical and bacteriological study of foods and drinks, and for the prosecution of investigations in the chemistry and action of bacterial and other toxins.

## **BACTERIOLOGICAL LABORATORY**

The west half of the second floor of the laboratory building is devoted to work in bacteriology. The two main laboratories contain seventy-eight desks, used by beginners and by advanced students. All the material required for the work is supplied, practically at cost, from a well-stocked dispensing room. Four rooms are devoted to research work of the professor in charge, his assistants, and others qualified to carry on special studies. An incubating room, maintained at a constant temperature, is provided with individual drawers for the use of students. A similar room is reserved for the work in research. A cold room, including a spacious refrigerator, is cooled by means of a liquid carbonic acid plant in such a way that the refrigerator can be kept at, or below, the freezing point, while the temperature of the room itself is maintained about 60°F. A special compartment of 1,000 cubic feet capacity is reserved for experimental room disinfection. Provision is made for operative work on animals, cremation of infected material, sterilization of cages, etc. Well-lighted rooms in the basement are devoted to store rooms and animal rooms, and, in addition, a large room is used for micro-photography. Gas, water and compressed air are supplied to the hoods in every work room. The laboratory is equipped with apparatus and instruments of the best make.

## **LABORATORY OF PHYSIOLOGICAL CHEMISTRY**

This laboratory is in the west half of the third floor of the laboratory building. The two rooms for the elementary and the advanced work are provided with sixty desks. An adjoining room is equipped with balances and microscopes. A preparation room contains, among other things, a distilling plant from which the water is taken in pipes to different parts of the building. There are also well equipped rooms for combustions, for optical work, and for gas analysis. In every room there are spacious hoods with fittings for steam and compressed air, in addition to gas and water. By an elaborate system of fan ventilation, the air in the laboratory is renewed every fifteen minutes. A recitation room is in direct connection with the laboratory.

### **COURSES**

The number of hours allowed toward credit in the College of Literature and in the College of Engineering is indicated under each course.

Course 1. *General Hygiene*. Professor VAUGHAN. Lectures are given three times a week during the second semester to the second-year students.—*Three hours*.

Course 2. *General Bacteriology*. Professor NOVY. Lectures and quizzes are given daily during the second semester to the first-year students.—*Five hours*.

This course is intended to furnish as broad a foundation as possible for the practical work in bacteriology and for the subsequent work in hygiene and clinical medicine. The course begins with the study of the forms of bacteria, their classification, structure, multiplication and reproduction, their requirements of growth, and their chemical products. Special attention is devoted to the study of the chemistry of bacteria, inasmuch as a full understanding of the relation of micro-organisms to disease is dependent upon a thorough knowledge of the chemical changes induced by the bacterial cell. The role of bacteria in nature as engenderers of fermentations and putrefactions is developed and utilized as a basis for the study of bacteria as the cause of disease. The principles of sterilization and disinfection are brought out, and special emphasis is given to their practical application. The latter half of the course deals exclusively with pathogenic organisms, protophytes and protozoa. The way in which bacteria cause disease, their attenuation, and the production of immunity are carefully expounded. The infectious diseases, one by one, are then considered from the standpoint of their etiology. The sources of infection and the methods of prevention are given, together with the general properties of the special micro-organisms. The pathogenic protozoa are studied in this connection to some extent, but the more detailed work is given in Course 4a.

Course 3. *Practical Bacteriology*. Professor NOVY and Assistant Professor DE KRUIF.

This laboratory course is required of all students in the first year. Every afternoon, from 2 to 6, for twelve weeks, is devoted to this work. Recitations are held daily. This course begins early in March and is *open only to students of this School*. It must be preceded by the required work in organic chemistry.

The object of this course is to make the student familiar with the methods of detection, isolation, and identification of the pathogenic micro-organisms. Incidentally, he becomes well grounded in the principles of disinfection and sterilization. The work begins with the preparation of the various culture media and the growth of certain non-pathogenic germs on these media. After the technique of the study is understood, pathogenic germs are grown on gelatin, agar, potato, etc.; animals are inoculated, the effects observed, post-mortem exam-



inations made, and the germs isolated and identified. Serum reactions are employed as far as possible for diagnostic work. The student who becomes familiar with the pathogenic bacteria and protozoa, thus early in the course, takes a more intelligent interest in the diseases to which they give rise than he can when his knowledge of them is confined to text-book or lecture description. Moreover, in many diseases the bacteriological study furnishes the only means of a positive and early diagnosis.

Course 3a. *Practical Bacteriology*. This course is the same as the preceding and is open to students other than those of the Medical School. It begins about the first of December and ends about the first of March.—*Four hours*.

Cours 3D. *Practical Bacteriology*. This course is given exclusively to the Dental students and requires every afternoon from 1 to 6 P. M. for a period of eight weeks, beginning the first week in October.

Course 3E. *Practical Bacteriology*. Assistant Professor DE KUIF. This course is open only to students of Sanitary Engineering. Three afternoons, each week, during the second half of the first semester, beginning December 1.—*Two hours*.

Course 3L. *Practical Bacteriology*. This begins about December 1st and continues until the end of the semester. It is open to non-medical students and covers the same ground as 3D. Daily, 1 to 6 P. M.—*Three hours*.

This course is intended for literary and pharmacy students.

Course 4. *Advanced Bacteriology*. Professor NOVY. This course is optional, and is open only to those who have taken Course 3 or 3a. It is open to a limited number of students only, and is intended to familiarize the student with the most advanced methods of investigation. It includes the detection of the various pathogenic organisms in tissues, the study of disinfectants, practical exercises in the disinfection of rooms, methods of increasing and decreasing the virulence of organisms, immunization of animals, testing of antitoxins and of serum reactions. Problems in original research are assigned to those having the time and necessary qualifications. Conferences are held weekly, and each student is expected to read original references in English and foreign periodicals.

Course 4a. *The Pathogenic Protozoa*. Professor NOVY. This follows Course 4 and is open to a limited number of students. It comprises laboratory work and reading and extends over a period of nine weeks. The spirochetes, trypanosomes, hemocytozoa and other pathogenic protozoa are studied at length in living and stained material.

Courses 4 and 4a must be elected together, as *six hours*.

Course 5. *Water Analysis*. Professor VAUGHAN and Mr. LEVIN. This embraces a chemical, microscopical and bacteriological study of drinking water. Special rooms are reserved for the

determination of free and albuminoid ammonia, such estimations being worthless when made in a general laboratory, on account of the ammonia in the air. The lower forms of vegetable and animal life are studied and identified. Special attention is given to the methods of bacteriological examination. A large collection of both toxicogenic and non-toxicogenic water germs has been made, and the effects of the former on animals may be studied.—*Three hours.*

Course 5E. *Water Analysis.* Professor VAUGHAN and Mr. LEVIN. Two afternoons, weekly, from October 1st to December 1st. This course is open only to students of Sanitary Engineering.—*Two hours.*

Course 6. *Food Analysis.* Professor VAUGHAN and Mr. SMITH. This consists of both chemical and bacteriological examinations of food, and is open only to those students who have had sufficient chemical and bacteriological training to enable them to pursue this work understandingly.

Course 7. *Research Work.* Professors VAUGHAN and NOVY. Research upon hygienic problems may be pursued by competent students. Special attention is given to studies of the bacterial toxins, immunity, etc. A most excellent library is at the service of those taking this course.

Course 8. *Physiological Chemistry.* Professor VAUGHAN. Lectures three times a week, during the first semester of the second year.—*Three hours.*

The subjects dwelt upon are: General biological chemistry; the formation and nature of secretions; the chemistry of carbohydrates, fats, proteins, the digestive juices, the cellular chemistry involved in their production, and the influence of disease on the same; digestive products, their origin and destination; the cellular chemistry of the liver, pancreas, spleen and kidneys; the brain, the blood, bones, epithelial tissues, muscles, and the nervous system. The influence of diseases and of medicine upon the normal chemistry of organs is discussed.

Course 9. *Physiological Chemistry.* Professor NOVY and Mr. PIPER. This is a laboratory course, and is required of all students in the second year. Every afternoon, from 1 to 5 P. M., for nine weeks is devoted to this work. Recitations are held daily. The course is given two times during the first semester, beginning in October and in December.—*Three hours.*

The student begins with the study of fats, carbohydrates, and proteins. The composition of saliva and the action of its ferments are next studied. The gastric juice is then taken up, and the tests for pepsin, free hydrochloric acid, lactic acid, etc., are carried out. The pancreatic secretion is studied in the same way; especial care is given to the study of the action of ferments on starches, fats, and proteins. The chemistry of bile is likewise studied carefully, especially the bile acids, bile pigments, and gall stones. Full attention is given to the

study of the blood and to the tests for its recognition by microscopical, chemical, and spectroscopic methods. The student becomes familiar with the methods of precipitation and separation of proteins by saturation with neutral salts; with the method of dialysis, and with the tests for proteins in general. The composition of milk is likewise studied, and each student makes a complete analysis. The study of normal urine is then taken up. Urea is prepared synthetically and also from urine, and its properties are studied. Several of its salts are prepared, and exercises in the determination of the melting point of urea, etc., are given. Uric acid is isolated from the urine and studied chemically and microscopically. The salts of uric acid are prepared, and its decomposition products, as alloxan, alloxantin, allantoin, are carefully studied. Hippuric acid is isolated from the urine and also prepared synthetically. The sulphur compounds of the urine, also the aromatic bodies, phenol, indol, skatol, and pyrocatechin, are likewise studied. The tests for recognition of pathological constituents, such as tyrosin, leucin, cholesterin, bile acids and pigments, blood, pus, sugar, are applied to pure solutions and to pathological urines. Attention is given to the detection of casts and the tubercle bacilli and other recognized forms in the urine. Thorough drill is given in the quantitative analysis of urines by gravimetric and volumetric methods. Empirical and decinormal solutions are prepared, and estimates of urea, uric acid, phosphates, chlorides, sulphates, albumin, globulin, sugar, and hæmoglobin are made. Throughout the course, pathological urines and secretions are submitted to the class for examination.

Course 10. *Advanced Physiological Chemistry*. Professor NOVY and Mr. PIPER. This course is optional, and, like the above, is of nine weeks' duration.

Course 10a. *Research in Bacteriology and Protozoology*. Professor NOVY.

Course 11. *The Administration of Health Laws*. Professor VAUGHAN.

## PHYSIOLOGY

PROFESSOR WARREN P. LOMBARD, A.B., M.D., Sc.D.  
OTIS MERRIAM COPE, A.B., M.D., Instructor in Physiology.  
THEOPHILE RAPHAEL, A.B., A.M., Assistant in Physiology.  
W. PARKER STOWE, Assistant in Physiology.  
JAMES MARK STANTON, Assistant in Physiology.

## PHYSIOLOGICAL LABORATORY

The Department of Physiology occupies an unusually commodious laboratory. The lecture room is a well-lighted, well-ventilated, and well-equipped amphitheater, which, with its adjoining preparation room, is admirably adapted to the teaching of physiology. It is supplied with an excellent lantern. A large, well-lighted room with

four smaller connecting rooms fitted for special forms of experiments, are devoted to the required laboratory course. Close by are the offices of the professor, instructor, and assistants. On the floor above are an optical room with photographic closet; a well-stocked instrument room; a shop containing an ample supply of tools for working metals, wood and glass; six small rooms suitable for special demonstrations and for original investigations; and, well-isolated but near by, comfortable rooms for housing the animals. The building is close to the University library, and the professor's private library contains many of the more important physiological journals, monographs and text-books. The instrumental equipment of the laboratory is in first-class order, and contains all of the more essential instruments used in physiological teaching and research.

#### COURSES

Course 1-2. *Animal Physiology*. Lectures, recitations, and demonstrations. Professor LOMBARD.

The lectures on this subject are given to freshmen five days a week beginning with the first week of March, and to sophomores five days a week the first semester of the second year. They include a systematic review of the field of animal physiology, especial emphasis being given to the physiological phenomena observed on men. They are accompanied by such demonstrations as can be profitably made to a large class of students. From time to time recitations are substituted for the lectures.

Course 3. *Laboratory Work*. Professor LOMBARD, Dr. COPE, and assistants.

This course is open to all students who have completed Course

1. The course is given five afternoons a week, from 1:30 to 5:00, during eight weeks. The sophomore class is divided into two sections, the first section taking the work during the first half of the first semester, and the second section during the second half of the semester. The object of the course is not only to familiarize the student with the ordinary methods employed in physiological work, so that he will be able to read more intelligently, but to cultivate a capacity for independent observation, and to supply that intimate knowledge of physiological processes which is to be obtained only by individual work. Inasmuch as this course is intended primarily for medical students, the experiments are made on the vertebrates, and, when the character of the experiment permits, on man. The students work in pairs, alternately serving as subject and experimenter. The experiments deal with the physiology of nerve and muscle; the physical problems of respiration and circulation; the nervous regulations of the heart, blood vessels and respiratory mechanisms; reflex processes and their modification by re-enforcing and inhibitory influences; and some



of the simpler phenomena of sensation. Each student is expected to perform individually each experiment, report the results obtained either in the form of graphic records or tabulated observations, and accompany these with such notes as will make it clear that the purpose of the experiments and the phenomena observed are clearly understood.

Course 4. *Advanced Physiology*. Professor LOMBARD.

This course is open to such students as shall have completed Course 3 satisfactorily, or can show that they are prepared to do special physiological work. It is designed as an introduction to the investigation of physiological problems. The student is expected to acquaint himself with the literature of the subject to be studied, to repeat the more important experiments which have been made by others, and to try to devise new methods of attacking the problem under consideration. Although working under direction, the student will be encouraged to develop independence and originality.

Course 5. *Research Work*. Advanced students and physicians who wish to investigate special physiological problems, will be given every aid which the laboratory and staff can supply.

## PATHOLOGY

PROFESSOR ALDRED SCOTT WARTHIN, PH.D., M.D.  
CARL VERNON WELLER, M.S., M.D., Assistant Professor.  
LOUIS W. GERSTNER, Technical Assistant.  
ROBERT RICHARD DIETERLE, Assistant.

## PATHOLOGICAL LABORATORY

The first floor on the east side of the laboratory building and rooms in the basement are occupied by the pathological laboratory. Abundant facilities are afforded for graduate work and for work in research. Special rooms are also assigned to work in gynecological and surgical pathology.

The laboratory is supplied with microscopes, microtomes, paraffin ovens, photographic, stereopticon and projection apparatus, and the other apparatus necessary in the study of pathological histology. Each student is furnished with a locker containing a microscope with high and low powers, and is assigned to a table containing the necessary stains and reagents for practical work. These are furnished by the laboratory.

The supply of material for the study of pathologic histology embraces every known pathologic condition. This collection gives ample material for the regular courses, and, in addition, offers special opportunities to the advanced student who may wish to pursue studies in certain lines of special pathology, as the pathology

of the nervous system, genito-urinary tract, skin, etc. In addition, an abundant supply of fresh material comes from the clinics of the University Hospital, and this is utilized to the fullest extent in the teaching both of gross and of microscopical pathology. The laboratory is fitted with various forms of freezing microtomes for use in the making of quick diagnoses and in the preparation of fresh material for class study.

The laboratory contains a very complete and well-arranged pathological museum which contains many rare and valuable specimens. These are utilized for teaching purposes as far as possible.

#### COURSES

**Course 1. *General Pathology.*** Lectures, recitations, demonstrations, autopsy technique, and seminary work. Sophomore year, first semester, four hours weekly; second semester, three hours weekly. Recitations based upon Warthin's *General Pathology and Practical Pathology*. Professor WARTHIN.

**Course 2. *Laboratory Course in General Pathology.*** Professor WARTHIN and Assistant Professor WELLER.

The sophomore class is divided into sections, each one of which spends half a semester in the pathological laboratory, working each day from one to five o'clock. In this course the histology of morbid processes in fresh and hardened, stained and unstained specimens is studied, and the student is required to demonstrate his knowledge of the same by drawings and written descriptions of the specimens. The course follows the general plan of Warthin's text-book, beginning with disturbances of circulation, and extending through retrograde changes, inflammation, tumors, specific infections, and the more important diseases of special organs. The specimens, about two hundred and fifty in number, are given to the student as unknowns, and with the aid of the teacher are worked out to a diagnosis, the training of the student to scientific habits of observation and investigation being considered of prime importance. Material, reagents, microscopes, etc., are furnished by the laboratory.

**Course 3. *Special and Gross Pathology.*** Professor WARTHIN.

One hour a week, in addition to the time taken for clinical autopsies, is given to the study of gross pathological anatomy during the third year. Autopsy methods of technique are taught by the use of the cadaver, and the material obtained from the clinics of the University Hospital is utilized for demonstration purposes. The greater part of the time given to this course is taken up with the demonstration of the material derived from the clinical autopsies, whereby practical application is made of the relation of the pathological findings to the clinical phenomena presented by the cases.

Course 4. *Autopsies.* Professor WARTHIN and Assistant Professor WELLER.

Attendance on post-mortems by junior students with the execution of all protocols is part of the junior work in connection with their clinical section work.

Post-mortem examinations are made of all available cases, and junior students also are expected to attend these, so that the candidate for the final examination in pathology must have seen at least forty clinical autopsies. It is advisable that these should be of cases whose progress the student has studied clinically in the hospital courses. Each student is expected to keep a written protocol of each autopsy, to attend the microscopical demonstrations, and to include in the protocol the description of the microscopical findings and the general summary of the conditions present.

In view of the peculiar necessities in regard to instruction in autopsy work it is given preference of other work taken by members of the junior class when cases for such instruction are furnished, it being understood that ample notice be given to the professor whose regular work is thus interrupted when the circumstances will permit of such notice. On Fridays from 1-2 P. M. the senior class will meet in the pathological laboratory for the consideration of the microscopical demonstration of the autopsy.

Course 5. *Elective Course in Pathologic Technique.* Professor WARTHIN and Assistant Professor WELLER.

Hours arranged with instructors. Instruction in general and special pathologic technique, with particular reference to practical diagnosis, demonstration of pathogenic micro organisms in tissues, neoplasms, gynecologic and surgical pathology.

Course 6. *Pathological Physiology.* Professor WARTHIN and Assistant Professor WELLER.

An elective course in practical pathological physiology is offered to junior students. Experimental study will be made of congestion, stasis, thrombosis, embolism, infraction, changes in pulse and blood-pressure, cardiac murmurs, etc. Hours arranged with instructor. Number of students limited.

Course 7. *Graduate Courses.* Professor WARTHIN.

The regular courses are open to post-graduate students, as are also special courses in technique and in the pathological histology of special organs, tumors, blood, etc. Those wishing to take the latter course must have had the necessary preliminary training. For the convenience of post-graduates the courses in pathology in the summer school are especially designed, and in courses given only to a limited number, discrimination will be made in favor of the post-graduate student.



Students in the public health courses will have especial opportunities afforded them in pathological and autopsy technique, parasitology, the special pathology of the occupational and infectious diseases.

*Journal Club.* A Journal Club in pathology in the junior year is composed of those students showing the highest scholarship in sophomore pathology. These students are given especial training in pathological technique, and in practical pathological diagnosis. They also assist personally at the autopsies. In addition they do especial library and Journal Club work in medical history, and are also encouraged to take up some research work. Simpler problems are assigned in part, while others take up the study and report of some of the more interesting autopsy cases.

For 1916-17 the following subjects were utilized:

- C. E. ANDERSON—Haemolytic Anaemias in the Infant.
- D. K. BACON—Study of a Case of Sarcomatous Hodgkins.
- T. S. BARNETT—Study of a Case of Neurocytoglioma.
- M. R. BURNELL—Pathologic Changes in the Lung Following Pelvic Operations.
- R. M. GREENTHAL—Three Cases of Pick's Disease.
- G. R. HERRMANN—Unusual Localizations of Amyloid in a Case of General Amyloidosis.
- C. C. HYDE—Study of an Embryonal Renal Tumor with Vertebral Metastases.
- W. P. STOWE—Types of Chronic Passive Congestion of the Liver.
- G. P. WILLET—

## PHARMACOLOGY, MATERIA MEDICA, AND THERAPEUTICS

PROFESSOR CHARLES W. EDMUNDS, A.B., M.D.  
 MARK MARSHALL, B.S., A.B., M.D., Instructor in Therapeutics.  
 LAURA M. DAVIS, R.N., Demonstrator of Anæsthesia.  
 MAURICE I. SMITH, B.S., M.D., Instructor in Pharmacology.  
 HERBERT WILLIAM EMERSON, B.S., M.D., Assistant in Pharmacology.  
 THEOPHILE RAPHAEL, A.M., Assistant in Pharmacology.  
 E. ROGERS SMITH, A.B., Assistant in Pharmacology.

## PHARMACOLOGICAL LABORATORY

The pharmacological laboratory, which for a number of years was located in the old medical building, has been transferred to the newer part of the old chemical building, which has been completely remodeled in order to make it suitable for this work. The changes

which have been made make it admirably adapted for the purpose, as ample room is given for work along chemical lines as well as along those of experimental pharmacology.

The laboratory is well supplied with apparatus and material for original work in this branch of research, and any student or graduate receives every encouragement in the prosecution of such work.

## MUSEUM OF MATERIA MEDICA

This consists of a fairly complete collection of the crude substances used in medicine along with their principal preparations and active principles. The drugs are arranged in groups convenient for study, importance being laid, not on their origin, but on their action. The museum is opened to students of the sophomore and junior classes at such hours as they arrange with the instructor.

### COURSES

Course 1. *Pharmacology*. Lectures and recitations. Three times a week during the second semester of the sophomore year. Professor EDMUNDS.

Course 2. *Pharmacology and Therapeutics*. Lectures and recitations. Three times a week during the first semester and twice a week during the second semester of the junior year. Professor EDMUNDS and Dr. MARSHALL.

The systematic course in Pharmacology and Therapeutics is given in the second semester of the sophomore year and the first and second semesters of the junior year, in lectures and recitations. The first part of the course is devoted to general pharmacology, in which the student is taught how far and in what direction drugs can influence living organisms, and how the changes induced by them may be utilized in combating disease. After the first month, the individual drugs are considered separately, their chemical characters and modes of preparation are discussed as far as these bear on their use in therapeutics, and their effects in the normal organism are examined in detail. The general conditions in which each drug may be used in disease are also pointed out, but no attempt is made to teach the therapeutics of individual cases, as this can be done more successfully in relation with the characters of the disease in the clinical courses. The student having become familiar with the functions of the normal organism during his earlier work, the chief object of the course is to elucidate the changes induced in these functions by drugs, and to show how far these changes may be made the basis of rational therapeutics. The study of the action of drugs on normal organisms naturally leads to the examination of their effects in poisonous doses, and how these may be counteracted, and the symptoms and treatment of cases of poisoning with each drug are thus

taken up in the course. Each of the important drugs is exhibited as it is described, both in the crude state and in the preparations commonly used, and students are required to recognize those forms which they are likely to use in practice or to meet in cases of poisoning; but this part of the subject is not given such prominence as to distract attention from the more important study of the effects of the drug.

In connection with this course the subject of prescription writing is also taken up and the students are given frequent drills upon this branch of the work. Before completing the course all the students are required to be able to prescribe correctly all the more important drugs.

During the latter part of the year the subject is considered from the standpoint of the disease conditions, and the students are required to prescribe for the same, thus giving a preliminary training for Course 4.

Course 3. *Experimental Pharmacology.* Professor EDMUNDS, Dr. SMITH, and assistants.

This course is given four afternoons a week for seven weeks during the second semester of the sophomore year. The student examines the effects of certain typical drugs on animals in a series of experiments designed to illustrate the principles underlying their therapeutic use. Thus, different doses are injected into animals and the resultant changes from the normal condition are noted. The point at which the drug acts and the character of its action are then determined as nearly as possible, and finally the application of the drug in therapeutics is discussed. A certain number of Galenical preparations are made from crude drugs and the forms in which they can be dispensed are pointed out; their action on animals is examined, and in some cases the active principles are isolated and their effects are compared with those of the crude drug. A commencement is made in prescribing, and the student is expected to fill some of his own prescriptions. Instruction in electrotherapeutics is also given during this course in the laboratory.

Course 4. *General Therapeutics.* Dr. MARK MARSHALL.

This course, which is given during the senior year, is designed to give the students a practical knowledge of the methods of utilizing the various agencies employed in the treatment of disease. In his earlier years the student has learned the physiological action of the drugs employed and in a general way their therapeutic uses, together with the best ways of administering them. In the present course he is taught to look at the subject from a different standpoint, viz., that of the pathological condition. A portion of the time allotted to this course is taken up with a series of lectures, in which the treatment of the various diseases is systematically considered. The remainder of the time is given to a therapeutic clinic, where

cases which have been presented in the medical clinic and upon which a diagnosis has been made are again considered from the standpoint of their therapeutic indications. The actions of such drugs as are indicated in the given case are discussed, together with the best preparations, and the student is required to write prescriptions for all preparations used in the treatment of the case. Aside from the strictly medicinal treatment of the patient, the student is taught the details of the management of cases, the latter including practical demonstrations in hydrotherapy and massage, lectures on dietetics, with demonstrations in invalid cooking, etc. Sections of the class are taken into the wards, where they gain an intimate knowledge of the patients and observe the progress of the cases under treatment. The ward section receives demonstrations in bed-making, the application of counter-irritants, the various uses of heat and cold, and other practical therapeutic measures.

Course 5. *Research Work on Pharmacology.* Professor EDMUNDS.  
Every encouragement is given advanced students and graduates, in the investigation of special problems in pharmacology and therapeutics, and in determining the value of new or imperfectly known drugs.

Course 6. *Practical Anesthesia.* Dr. MARSHALL and Miss DAVIS.  
During the year each member of the senior class receives personal instruction upon the subject of the practical administration of anesthetics, and each student is required to give a certain number of anesthetics under the immediate supervision of the Demonstrator of Anesthesia.

Course 7. *Pharmacology.* Lectures and recitations. Four times a week through second semester. Dr. EMERSON.  
This course consists of a series of lectures and recitations upon the subject of Pharmacology and is intended primarily to meet the needs of the students engaged in the study of pharmacy. Not only is there a study of the mode of action of drugs in the animal body, but especial attention is given to the preparations and doses in which these drugs are administered to man.

## SURGERY

PROFESSOR CHARLES BEYLARD DE NANCREDE, A.M.,  
M.D., LL.D.

PROFESSOR CYRENUS G. DARLING, M.D.

IRA D. LOREE, M.D., Associate Professor of Genito-Urinary  
Surgery.

CHARLES L. WASHBURNE, M.D., Instructor in Orthopedic  
Surgery.

MAX MINOR PEET, A.M., M.D., Instructor in the Principles of  
Surgery.

HAROLD DE BLOIS BARSS, A.B., M.D., Instructor in Surgery  
and Chief of Surgical Clinic.

HARRY M. MALEJAN, A.B., M.D., Instructor in General and  
Orthopedic Surgery.

ROLLAN W. KRAFT, B.S., M.D., Clinical Demonstrator in  
Genito-Urinary Surgery.

ROBERT H. BAKER, A.B., M.D., Interne.

LOWELL L. YOUNGQUIST, B.S., M.D., Interne.

EDWIN R. SCARBORO, A.B., Interne.

## COURSES

### Third Year

Course 1. *Lectures and Recitations.* Professor DE NANCREDE and Dr.  
PEET. Two hours a week during the first and second  
semesters.

This course embraces a series of lectures, recitations and text-  
book work on the principles of surgery, and is intended to  
prepare the student for course 2 and in the foundation prin-  
ciples of the surgical courses given in the fourth year.

Course 2. *Minor Surgery.* Dr. PEET. During the second semester  
special instruction is given for one hour a week to the  
third year class upon minor surgery, the nature and use of  
instruments and apparatus, and upon the most approved meth-  
ods of surgical history taking and the examining of patients.  
Third year students are advised to attend the surgical clinics  
when not engaged in other work.

Course 3. *Demonstration Course in Operative Surgery.* Dr. PEET.  
This course will comprise:

- (1) Bandaging and fracture dressings.
- (2) Operations upon the cadaver in which amputations and  
other surgical operations will be performed by the student,  
under the direction of the instructor.
- (3) Operations upon animals, in which abdominal surgery,  
amputations, etc., are done by the student with all the at-  
tention to detail in asepsis, antisepsis and dressings be-  
stowed in similar operations upon man. All operations upon  
animals are done under general anaesthesia, under the di-  
rection of a trained anaesthetist.



### Fourth Year

The section method of teaching has been adopted for the senior year, the class being divided into four sections, each section receiving instruction in surgery for a period of nine weeks as follows:

- Course 1. *Demonstration Course in General, Genito-Urinary, and Orthopedic Surgery.* Drs. BARSS and MALEJAN. Post-operative care of patient and the application of surgical dressings, one hour daily for a period of nine weeks.
- Course 2. (a) *General Surgical Clinic*, 9 to 12 A. M. Professors DE NANCREDE and DARLING, Drs. PEET, BARSS and MALEJAN.  
(b) *Genito-Urinary Surgery*, 9 to 12. Professor LOREE and Dr. KRAFT.  
(c) *Orthopedic Surgery*, 9 to 12. Drs. WASHBURN and MALEJAN.
- Course 3. *Diagnostic Surgical Clinic.* Professors DE NANCREDE, DARLING and LOREE. Two hours a week during the first and second semesters. Surgical cases are presented by the student, the diagnosis reached and the treatment outlined, the professor in charge questioning, criticising and correcting the student to determine why the diagnosis, prognosis and suggested treatment have been decided upon.

### INTERNAL MEDICINE AND PEDIATRICS

PROFESSOR NELLIS B. FOSTER, M.D.

DAVID MURRAY COWIE, M.D., Associate Professor of Pediatrics and Internal Medicine.

LOUIS H. NEWBURGH, M.D., Assistant Professor of Medicine.

MARK MARSHALL, M.D., Instructor in Therapeutics, Chief of the Out-Patient Department.

QUINTER O. GILBERT, M.D., Instructor in Laboratory Diagnosis.

WILLIAM R. VIS, M.D., Instructor in Physical Diagnosis.

FRED PLUMMER CURRIER, M.D., Instructor in Clinical Medicine.

C. H. LAWS, M.D., Instructor in Pediatrics.

EZRA E. KOEBBE, M.D., Assistant in Pediatrics.

ROBERT JAMES SNIDER, M.D., Medical Interne.

LOUIS D. STERN, M.D., Medical Interne.

CHARLES M. N. ANDERSON, B.S., Interne in Pediatrics.

GEORGE D. TREADGOLD, Interne in Pediatrics.

The medical teaching is given in the hospital wards, the out-patient department, laboratories, and amphitheatre. The student is constantly in contact with patients and emphasis in teaching is laid upon exactness of diagnosis and a scientific conception of disease and treatment.



## Second Year

Introduction to Clinical Medicine for students of the second year, second semester.

- (1) *Interpretation of Symptoms and Signs.* One lecture a week is given and deals with the taking of histories, the analysis of symptoms and the physical signs of the common organic diseases. Professor FOSTER.
- (2) *Practical Instruction.* During the second semester the students in small groups begin practical work in the out-patient department, taking histories of patients and learning the art of physical diagnosis. Special emphasis is given to normal variations in physical signs. Two days a week, 10-12. Drs. MARSHALL, VIS, and CURRIER.
- (3) *Clinic.* One amphitheatre clinic a week is conducted at which cases showing marked symptoms are presented. Records of cases that have been confirmed by autopsy are given the student and at the next clinic these histories are discussed by the students and the anatomical diagnosis is finally read.

## Third Year

Instruction in Clinical Medicine during the third year is directed primarily toward training the student in the art and science of diagnosis. To this end the class is divided into small groups for practical work in the out-patient department where each student gathers the facts concerning his patient and the instructor reviews and corrects these facts with the student. This work is supplemental by laboratory instruction, beside conferences, and clinics.

*Laboratory Diagnosis.* Dr. GILBERT conducts the course in Microscopical and Chemical Diagnosis. Each student has a desk and a locker with the necessary instruments. The course is a systematic one in which the student is trained in the technique of examination of blood, urine, feces, sputum, gastric contents, etc. Application of the methods is made by the student to the diagnosis of his cases in the out-patient department.

*Medical Clinic.* Important diseases are presented to the whole class at two clinics a week. Cases taken from the out-patient department where they have been studied previously by the student are used to bring out the main features in differential diagnosis. Professors FOSTER and NEWBURGH.

## Third Year

*Clinical Medicine.* The class is divided into sections for work in the out-patient department. The student takes the history of his patient, makes the examination, including the laboratory tests, and then presents his data for review and criticism by

the instructor. The work is entirely practical and demands a wide range of collateral reading. Twelve hours a week for four weeks in the first semester and three weeks in the second semester. Dr. MARSHALL and associates.

### Fourth Year

The class is divided into four groups, each group serving for nine weeks in the medical wards.

*Ward Work.* The members of the Medical group serve as clinical clerks in the medical wards to which they have free access from 8 A. M. to 6 P. M. As new cases enter the wards they are assigned in rotation to the clerks who take the histories and make the physical and laboratory examinations under guidance of the staff. Each student is held accountable for a knowledge of his patients and during the period when a student is serving as clerk his mornings from 8 to 12 are free for this work. The student is also expected to be familiar with the literature of diseases with which he comes in contact. Twenty-four hours per week for nine weeks.

*Ward Rounds.* The wards are visited every morning at 9 o'clock by the chief or his assistant, attended by the group of clinical clerks and the internes. At these rounds the diagnosis of a patient's disorder, his present condition, the treatment and prognosis, are discussed; the student acting as physician in charge and the instructor as consultant. Seven hours a week.

*Clinical-Pathological Conference.* One hour a week is devoted to a discussion of autopsy material from the hospital. The clinical diagnosis is read and the results of autopsy given. Professors WARTHIN and FOSTER.

*The Saturday Clinic.* At this clinic, which is attended by third and fourth year students, cases from the wards are presented. The history and laboratory findings are given by the clinical clerk in charge of the case and the case is discussed fully. At these clinics the more recent facts bearing on various disease pictures are brought to the student's attention and principles demonstrated.

### Graduate Work

*Clinical Medicine.* A limited number of physicians may be admitted to the clinics, wards, and laboratory classes, but cannot be received as clerks. Physicians who have had adequate training will be received as voluntary assistants and the facilities of the clinic opened to them for the study of definite problems. The equipment for investigation includes the hospital wards and out-patient department, the clinical and chemical laboratories, and the heart station.

## DISEASES OF CHILDREN AND INFECTIOUS DISEASES

The study of Pediatrics begins in the second semester of the junior year with a series of lectures and demonstrations on the fundamental principles of infantile nutrition and infant feeding. The class meets at the hospital. A special effort is made to demonstrate the points covered in the lectures by the presentation of illustrative cases. In the senior year clinics, lectures and recitations are held on the diseases common to the period of infancy and childhood and the specific infectious diseases. Each student is given the care of a limited number of patients and is required to make careful records and laboratory examinations on all cases assigned to him, and to be prepared to discuss the cases before the class or section at any time. One hundred and twenty-two hours are devoted to this Medical specialty.

**THE PALMER MEMORIAL WARD FOR SICK CHILDREN:** This hospital of 75 beds connected with the University group of hospitals admits infants and children up to the age of 12 years. The beds are all filled and there is usually a waiting list. The hospital is thoroughly equipped and beautifully situated. The nursing department of the hospital is under the care of a thoroughly competent head nurse who has specialized in the nursing of sick children. A state law provides free treatment for all children in the State of Michigan who are in need of and unable to pay for hospital treatment. An abundance of medical cases for instruction in diseases peculiar to infancy and childhood is thus secured. A social service worker in connection with this ward enables the management to make the work of the hospital more effective for the child.

**MILK LABORATORY:** The milk laboratory in the Palmer Memorial Ward is equipped with refrigerator, sink, work tables, Babcock electric centrifuge for fat determinations, and all the appliances for the scientific preparation of infant food. The food for infants in the hospital is prepared in this laboratory. An opportunity is given the student to familiarize himself with this work.

**PEDIATRIC LABORATORY:** In the basement of Palmer Ward a well-equipped laboratory is provided for urine, blood, stool, stomach analysis, etc., and for conducting research work in diseases of children. In this laboratory students of the senior class receive instruction in the clinical chemistry of milk and digestion, and in milk analysis.

**INFECTIOUS DISEASE LABORATORY:** This laboratory, situated in the basement of the new infectious disease hospital, is equipped with everything necessary for chemical and bacteriological examinations, and for research in infectious diseases. Each student is given instruction and practice in the laboratory diagnosis of diphtheria, and other infectious diseases in so far as the laboratory is of service, and

a limited number are permitted to assist in the routine and research work of the laboratory.

**HOSPITAL FOR INFECTIOUS DISEASES:** The new hospital for infectious diseases has been so constructed that demonstrations can be given to the entire class from the outside of the building, and to small sections of the senior class working at the bedside. The hospital is complete in every detail for carrying out the *aseptic method* of caring for patients afflicted with a contagious malady. All students are thoroughly instructed in the hospital technique before they are admitted to the infectious wards.

Course 9. Professor COWIE and Dr. LAWS. Junior year. Lectures, recitations and clinical demonstrations on infantile nutrition and infant feeding are given to the entire class once a week during the second semester.

Course 10. Professor COWIE and Dr. LAWS. *Bedside Instruction and Clinical Conference.* Each week for a period of six weeks small sections of the class devote three periods of two hours each to bedside instruction and clinical conference. At the clinical conference one student presents an assigned subject, the other members of the section enter into the discussion of it. Points omitted or to be emphasized are brought out later by the instructor, particularly points of differential diagnosis and therapy.

Course 11. Professor COWIE. General clinic once each week, throughout the entire year. A student is assigned to each case entering the ward and presents it before the class, giving a synopsis of the important points in the history and demonstrating the physical signs and laboratory findings so far as is possible. Cases presented in the clinic are frequently supplemented by lantern demonstrations.

Course 12. Professor COWIE and Dr. LAWS. Lectures and recitations on the diseases common to infancy and childhood and infectious diseases are given to the entire class once each week throughout the entire senior year.

Course 13. Dr. LAWS. Senior year. A laboratory course on milk analysis, including methods for the recognition of adulterations and the enumeration and differentiation of bacteria. Instruction is also given in the examination of infant's stools. The course is entirely practical and is given to small sections of the senior class for a period of 3 hours, once a week for 5 weeks.

Course 14. Professor COWIE and Dr. LAWS. Advanced work in clinical chemistry of milk, digestion and metabolism. Research in diseases of infancy and childhood, and the infectious diseases. A limited number of graduates, and undergraduates who have completed Course 7 can be accommodated,

## OBSTETRICS AND GYNECOLOGY

PROFESSOR REUBEN PETERSON, A.B., M.D.

RUDOLPH A. BARTHOLOMEW, A.B., M.D., Instructor in Obstetrics and Gynecology.

LESLIE LEE BOTTSFORD, A.B., M.D., Instructor in Obstetrics and Gynecology and Demonstrator of Obstetrics.

JOHN WESLEY SHERRICK, B.S., M.D., Instructor in Obstetrics and Gynecology and Assistant Demonstrator of Obstetrics.

HAROLD HENDERSON, B.S., M.D., Resident Obstetrician and Gynecologist.

### COURSES

#### Third Year

Course 1. *Obstetrics. Lecture and Recitation Course.* Professor PETERSON, and Drs. BOTTSFORD, SHERRICK, and HENDERSON. Three hours a week during the first and second semester.

The study of obstetrics is begun in the first semester of the junior year. By lectures, lantern slide demonstrations and recitations the student is taught the theory of Obstetrics and is prepared for the practical work assigned him in the Maternity Ward of the hospital during his senior year.

Course 2. *Obstetrics. Demonstration and Manikin Courses.* Drs. SHERRICK and HENDERSON. Ten hours a week for eight weeks.

Small sections of junior students are given individual instruction in the examination of the pregnant woman during all stages of pregnancy, and are thoroughly drilled in the mechanism of labor for normal and pathologic presentations (on the manikin). The Maternity Hospital is arranged so that each section of students has one or more opportunities for observing the actual management of labor. Because of the small number of students in each section the student has the opportunity of acquiring the technique of each obstetric operation, thus rendering his knowledge essentially practical. The essentials of pelvimetry are carefully taught, and each student is given a practical examination in obstetric diagnosis and manipulation at the conclusion of the course.

Course 3. *Gynecology. Recitation Course.* Drs. BOTTSFORD, SHERRICK and HENDERSON. One hour a week during first and second semester.

This course is intended to serve as a groundwork for the gynecologic clinics of the senior year. The fundamental principles of gynecology are covered by a series of quizzes.



### Fourth Year

Course 4. *Obstetric and Gynecologic Clinic.* Professor PETERSON and assistants. Two hours a week during the first and second semester.

Abnormal cases in the Maternity Ward are assigned to small sections of students, who report upon them to the whole class. The report is then criticized by the instructor and the case gone into in considerable detail. The chief aim is to present in a clinical way abnormalities of pregnancy, labor and the puerperium.

Every gynecologic patient entering the hospital is assigned to two students, who are expected to follow the case as long as the patient is in the hospital. The members of the section take a careful history of the case, make a physical and pelvic examination and are prepared to give diagnosis, prognosis and treatment during the first hour of the clinic. Their report is then criticised by the instructor and the differential diagnosis taken up in detail. The patient is operated upon during the second hour, and the student thus afforded an opportunity of ascertaining the correctness of his diagnosis. Other operations are performed before small sections of the class.

Course 5. *Practical Obstetrics.* Drs. SHERRICK and HENDERSON.

With thirty-two beds for obstetric patients, the number of deliveries in the Maternity Hospital is sufficiently large so that each senior student is required to deliver three patients and witness at least fifteen other confinements before being recommended for graduation.

All deliveries are conducted under the immediate supervision of the demonstrator or the assistant demonstrator, who report to the head of the department any unusual developments. A record of the attendance at each confinement is kept, and those present are thoroughly quizzed in reference to pertinent points of diagnosis, mechanism and treatment.

The waiting obstetric patients are assigned to sections of the senior class. Each student in such section is notified at the onset of labor and is expected to be present at the confinement of every case assigned to his section, or until he has observed his fifteen cases.

When assigned to a case the student is expected to take a careful history and to make a physical examination, working out in the presence of the demonstrator the presentation and position of the fetus and any abnormalities presented by the patient. During the confinement he intelligently describes the labor upon blanks provided for this purpose, and afterward is expected to visit the puerperal patient and newborn child daily for one week. In this way he is given exact, detailed, bedside instruction.



An outpatient obstetric service has been established in connection with the practical work given at the Maternity Hospital. The women cared for in this service are poor patients referred by the local physicians and charitable societies. Prior to confinement, the patient is visited in her home. A careful antepartum examination is made and a brief history is taken. At the time of labor a physician, nurse and senior student attend. The student is taught the actual management of labor in the home. Fully equipped obstetric bags are carried, so that the confinement is conducted under the best possible aseptic conditions. The postpartum calls are made by the student attending the labor who reports to the instructor the progress of the mother and child. An abnormal development is reported to the head of the department.

Course 6. *Obstetrics and Gynecology. Diagnostic Clinic and Ward Class.* Professor PETERSON and assistants. Two hours daily for six weeks.

The senior class is divided into small sections and drilled in bimanual pelvic examinations. The ordinary gynecologic lesions are carefully demonstrated. On account of the abundance of material the student is made thoroughly familiar with different types of gynecologic disease. The section is taken through the obstetric and gynecologic wards, where an opportunity is afforded of following from day to day the progress of the patients operated upon at previous clinics. Post-operative treatment is considered in detail.

A certain portion of the six weeks is devoted to ward walks through the Maternity Hospital, at which time normal and abnormal puerperal cases are demonstrated. In this way the student is able to follow the course of a large number of maternity cases from the time of confinement to their discharge from the hospital. Since it is a rule of the department that infants shall remain in the Maternity Hospital six weeks before being sent to institutions for adoption, abundant opportunities are given the student for studying the best methods of artificial feeding. An effort is made to supplement in a practical way at the Maternity Hospital the more elaborate methods taught in the department of Pediatrics.

## DISEASES OF THE MIND AND NERVOUS SYSTEM

PROFESSOR ALBERT MOORE BARRETT, A.B., M.D.  
ASSOCIATE PROFESSOR CARL DUDLEY CAMP, M.D.  
THEOPHIL KLINGMANN, PH.C., M.D., Demonstrator.

## PSYCHOPATHIC HOSPITAL

ARNOLD L. JACOBY, A.B., M.D., First Assistant Physician in the Psychopathic Hospital and Instructor in Psychiatry.  
ROBERT A. HALE, Resident Physician in the Psychopathic Hospital and Assistant in Psychiatry.  
ADELINE GURD, M.D., Pathologist and Instructor in Psychiatry.  
LEONORE DRAPER, Laboratory Assistant in the Psychopathic Hospital.  
SOBEI IDE, M.D., Serologist.  
FLORENCE BUCKLEY, Assistant in Serology.

### COURSES

- Course 1. *Neural Pathology and Physiology*. Professor BARRETT. This course is given to the third year students. The class is divided into sections. The work for each section will consist of 15 exercises, each of two hours. The course will be laboratory work in the pathological anatomy and physiology of the nervous system, as a preparation for the clinical and didactic instruction given in the fourth year.
- Course 2. *Lecture and Recitation Course*. Professor CAMP. One hour each week throughout the year. The course is for students of the third year, and will consist of didactic lectures and recitations on the diseases of the nervous system.
- Course 3. *Clinical Lecture*. Professor CAMP. Two hours each week throughout the year. In this course students are assigned to examine the patients and to prepare a case record of the patients presented and to discuss the disease and treatment.
- Course 4. *Psychiatry*. Professor BARRETT. This is a clinical lecture course given one and one-half hours each week throughout the year. The abundant material in the Psychopathic Hospital is used to illustrate the various types of mental diseases, and students during the course have practical experience in the examination of patients and the preparation of case records.
- Course 5. *Ward Class*. Professor CAMP and Dr. KLINGMAN. Two hours daily. The fourth year class is divided into small sections, and these in turn are taken on the visits to the ward, where cases are discussed in conference at the bedside.

- Course 6. *Ward Class.* Professor BARRETT. Two hours on one day each week. A section of the fourth year class will visit the wards for bedside instruction at the Psychopathic Hospital.
- Course 7. *Laboratory Work in Neural Pathology.* Professor BARRETT. Opportunity is offered in the laboratory of the Psychopathic Hospital for research work in the pathological histology of the nervous system.
- Course 8. *Laboratory Work in Experimental Psychology.* Professor BARRETT and Professor PILLSBURY. Opportunity is offered in the psychological laboratory of the Psychopathic Hospital for work in experimental psychology in its relation to mental diseases.

## OPHTHALMOLOGY

PROFESSOR WALTER R. PARKER, B.S., M.D.

GEORGE SLOCUM, M.D., Instructor in Ophthalmology.

GRADY EDWARD CLAY, B.S., M.D., Instructor in Ophthalmology.

AVERY D. PRANGEN, B.S., M.D., Assistant in Ophthalmology.

MORTON E. BROWNELL, B.S., M.D., Interne.

### COURSES

- Course 1. *Lectures on Ophthalmology.* Professor PARKER.

The Didactic Course to senior students consists of lectures on diseases of the eye, with especial reference to ocular changes in general diseases. The lectures are illustrated by diagrams, charts, and healthy and diseased eyes. The course is supplemented by text-book work and quizzes. Examinations are held at the end of each semester.

- Course 2. *Clinical Lectures.* Professor PARKER. The clinics are held twice each week throughout the year, operations being performed in the presence of small sections of the senior class. In addition to the above work, senior students receive instruction at the bedside of patients, upon whom they have previously witnessed operations, thus affording an opportunity of studying each case from the time of its admission to the hospital until its discharge.

- Course 3. *Demonstration Course.* Dr. SLOCUM. The junior class is divided into sections for the purpose of taking a six weeks' Demonstration Course. This course consists of instruction in the embryology, histology, anatomy, and physiology of the eye, together with a drill in the principal uses of the ophthalmoscope, and other instruments employed in the diagnosis and treatment of diseases of the eye.

## OTO-LARYNGOLOGY

PROFESSOR R. BISHOP CANFIELD, A.B., M.D.

ROY A. BARLOW, B.S., M.D., Instructor in Oto-Laryngology.

ALBERT CARL FURSTENBERG, A.B., M.D., Demonstrator in Oto-Laryngology.

EVAN G. GALBRAITH, B.S., M.D., Interne.

## COURSES

Course 1. *Lectures on Oto-Laryngology.* Professor CANFIELD. This course consists of lectures during the senior year. The lectures are illustrated by the presentation of the patients demonstrating the diseased conditions described didactically. They are further illustrated by lantern slides showing the gross and microscopical findings. Review quizzes are held by Dr. BARLOW.

Course 2. Clinical instruction is given to small sections of the senior class two hours three mornings a week. Patients are turned over to the students for examination and diagnosis; the professor in charge then criticizes their efforts and suggests treatment, which is carried out under his supervision. In this way the students come into intimate relationship with the clinical material and become proficient in diagnosis.

Major and minor operating is carried on before these small sections in such a way that students can observe carefully the various steps of operations.

Bedside instruction in diagnosis, post-operative care and treatment is given in the morning sections.

Two or three students who show an aptitude and desire for this kind of work are selected to serve as the undergraduate staff of the department, which appointment gives them opportunity to increase their diagnostic skill, to give anæsthetics and to assist in all operations.

Course 3. *Demonstration Course to the Junior Class.* Professor CANFIELD and Dr. BARLOW. The class is divided into sections for the purpose of taking a six weeks' course. The work consists of:—

- (1) Instruction in the physiology and anatomy of the region which is illustrated by an abundance of anatomical material and by means of the lantern.
- (2) Instruction in the technique of examination of the ear, nose and throat cases, with special reference to history taking, methods of clinical diagnosis, and functional testing. Patients are apportioned to each student, who spends periods of two hours twice a week under the supervision of the instructor.

## DERMATOLOGY AND SYPHILOLOGY

PROFESSOR UDO J. WILE, A.B., M.D.

JOSEPH A. ELLIOTT, A.B., M.D., Instructor in Dermatology and Syphilology.

ROY A. MCGARRY, M.D., Instructor in Dermatology and Syphilology.

LYLE B. KINGERY, B.S., M.D., Resident in Dermatology and Syphilology.

### COURSES

Course 1. *Syphilology Lecture and Clinic Course.* Professor WILE. Sixteen hours in the second semester.

The study of syphilology is presented in this course in the form of didactic lectures, lantern slide demonstrations and occasional clinics. This course deals with the clinical aspects of syphilis in its various stages and forms and is designed to prepare the student for closer observation of the cases seen in the fourth year clinical sections.

Course 2. *Histopathology of the more common cutaneous disorders.* Dr. ELLIOTT. Sixteen hours in the second semester.

This is a short course of lectures and microscopic demonstration of the elementary pathological processes as they appear in the skin.

### Fourth Year

Course 3. *Dermatology and Syphilology clinic.* Professor WILE and assistants. One and a half hour a week throughout the year.

During this course are demonstrated to the entire class the patients under treatment and observation in the department. The cases are presented by the students who are at that time doing section work and to whom are assigned in rotation the cases as they come in. The clinical aspects of each case are described in full by the student presenting the case and he is quizzed on the etiology, pathology, differential diagnosis and treatment of the condition. The course is elaborated by colored photographs and lantern slide demonstrations, illustrating as far as possible the diseases from which that under discussion is to be differentiated.

Course 4. *Dermatology and Syphilology section work.* Professor WILE and Dr. ELLIOTT.

The senior class is divided into five sections, each of which works six weeks, five hours each week. During this time the students act as clinical clerks, taking the patients' histories and making routine laboratory examinations for hospital record. All the patients in the hospital are carefully examined by the instructor and students at the same time. The etiology,



differential diagnosis and treatment of each case is thoroughly discussed. During this course the students have an opportunity of seeing at close hand the various methods of treatment, including the intravenous injections of salvarsan, the routine treatment and care of syphilitics and patients suffering from common or obscure dermatoses. One hour a week of the time devoted to this course is spent in ward rounds and bedside instructions.

Course 5. *Dermatology and Syphilology summer course.* Professor WILE and Dr. MCGARRY. Section work.

Six and a half hours for six weeks during the summer. This course is designed for the fourth year students, desiring to complete the section work during the summer, also for post-graduate students.

## MEDICAL JURISPRUDENCE AND TOXICOLOGY

PROFESSOR VICTOR C. VAUGHAN, M.D., LL.D.

CLARENCE A. LIGHTNER, PH.B., LL.B., Lecturer on Medical Jurisprudence.

One hour a week throughout the year, to fourth year students.

Professor VAUGHAN will lecture to the joint senior classes of the law and medical schools on these subjects from the medical side, and Mr. LIGHTNER will lecture to the same classes on the legal questions involved in these subjects.

## ROENTGENOLOGY

JAMES G. VAN ZWALUWENBURG, B.S., M.D., Associate Professor of Roentgenology.

BESSIE AGNES PARSONS, Assistant in Roentgenology.

BURR F. ANDERSON, Technical Assistant in Roentgenology.

MARION PAYNE, Assistant in Roentgenology.

The equipment of the Department has been constantly improved and enlarged with the double purpose of making it the most useful and convenient as well as thoroughly representative of modern equipment and practice. The library of lantern slides, carefully classified and catalogued, including examples of normal and pathological radiograms, is kept thoroughly upto date and is open to the use of any one connected with the Medical School. All plates and records are open to the clinical staff and undergraduate students, and are in daily use in clinical instruction.

Course 1. *Radiography and Radiotherapy.* Professor VAN ZWALUWENBURG. Lectures and demonstrations to the fourth year students, once a week throughout the year.



## PROGRAM OF EXERCISES

1916-1917

## FIRST SEMESTER

## SENIORS

## LECTURES AND RECITATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Clinical Sections.	8-10	8-10	8-11	8-10	8-11	8-11
Gynecology .....		10-12 H S				
Surgery .....	10 H S					11 H M
Therapeutics .....			11 H M			
Otolaryngology .....				10 H M		
Ophthalmology .....				11 H M		
Pediatrics .....	11 H M				11 H M	

## CLINICS

Medicine .....					1:30	
Psychiatry .....	1:30					
Dermatology .....				1:30		
Surgery .....	3:00	3:00		3:00		
Neurology .....			3:00			
Therapeutics .....		1:30				
Medical						
Jurisprudence .....					3:00 L B	
Roentgenology .....			2:00			

## FIRST SEMESTER

## JUNIORS

## LECTURES AND RECITATIONS

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Pharmacology ..			9 H M	10 P	9 W L	
Obstetrics .....	9&11 H M	8 H M				
Gynecology .....	10 H M					
Neurology .....		9 H M				
Surgery .....		10 H M	10 H M		10 W A	
Medicine .....	8 H M	11 H M	8 H L	8 W A		10 H M
Pathology .....				9 E A		

Laboratory and Demonstration Courses, as follows, are given during the afternoons of the junior year:

Physical Diagnosis and Clinical Microscopy, eight weeks.

Surgery, eight weeks.

Obstetrics and Gynecology, eight weeks.

Ophthalmology and Otolaryngology, eight weeks.

# PROGRAM OF EXERCISES

1916-1917

## SECOND SEMESTER

### SENIORS

#### LECTURES, RECITATIONS AND CLINICS

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Clinical Sections	8-10	8-10	8-11	8-10	8-11	8-11
Gynecology .....	8-10	10-12 HS	8-11	8-10	8-11	8-11
Surgery .....	10 H L	10-12 HS	8-11	10 H M	8-11	11 H M
Otolaryngology .....	10 H L	10-12 HS	8-11	10 H M	8-11	11 H M
Ophthalmology .....	10 H L	10-12 HS	8-11	11 H M	8-11	11 H M
Pediatrics .....	11 H M	10-12 HS	8-11	11 H M	8-11	11 H M
Medical	11 H M	10-12 HS	8-11	11 H M	8-11	11 H M
Jurisprudence .....	11 H M	10-12 HS	11 W A	11 H M	8-11	11 H M

#### CLINICS

Therapeutics .....	1:30	1:30	1:30	1:30	3:00	3:00
Psychiatry .....	1:30	1:30	1:30	1:30	3:00	3:00
Surgery .....	3:00	3:00	3:00	3:00	3:00	3:00
Medicine .....	3:00	3:00	3:00	1:30	1:30	1:30
Dermatology .....	3:00	3:00	1:30	1:30	1:30	1:30
Neurology .....	3:00	3:00	3:00	3:00	3:00	3:00

## SECOND SEMESTER

### JUNIORS

#### LECTURES AND RECITATIONS

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Pharmacology ..	9 & 11	8 H M	9 H M	10 P	9 H M	10 H M
Obstetrics .....	9 & 11	8 H M	9 H M	10 P	9 H M	10 H M
Gynecology .....	10 H M	8 H M	9 H M	10 P	9 H M	10 H M
Neurology .....	9 H M	10 H M	10 H M	11 W A	10 H M	10 H M
Surgery .....	10 H M	10 H M	10 H M	11 W A	10 H M	10 H M
Medicine .....	8 H M	11 H M	8 H M	9 E A	9 H M	10 H M
Pathology .....	8 H M	11 H M	8 H M	9 E A	9 H M	10 H M
Syphilology .....	8 H M	11 H M	8 H M	9 E A	9 H M	10 H M
Pediatrics .....	8 H M	11 H M	8 H M	9 E A	9 H M	10 H M

Laboratory and Demonstration Courses, as follows, are given during the afternoons of the junior year:

Physical Diagnosis and Clinical Microscopy, daily, eight weeks.

Surgery, daily, eight weeks.

Obstetrics and Gynecology, eight weeks, three times a week.

Ophthalmology and Otolaryngology, eight weeks each, twice a week.

Neural Pathology, daily, three weeks.

Dermal Pathology, daily, one week.

**PROGRAM OF EXERCISES**

1916-1917

**FIRST SEMESTER****SOPHOMORES****LECTURES AND RECITATIONS**

	Mon.	Tues.	Wed.	Thurs.	Fri.
Physiology .....	9 P	9 P	9 P	9 P	9 P
Physiological Chemistry...	10 W L	.....	10 W L	.....	10 W L
Pathology .....	11 E A	11 E A	11 E A	11 E A	.....

**LABORATORY COURSES**

Physiological Chemistry...	1-5	1-5	1-5	1-5	1-5
Physiology .....	1-5	1-5	1-5	1-5	1-5

**SECOND SEMESTER****SOPHOMORES****LECTURES AND RECITATIONS**

	Mon.	Tues.	Wed.	Thurs.	Fri.
Pathology .....	.....	9 E A	9 E A	11 E A	.....
Pharmacology .....	9 E A	10 P	.....	.....	9 W A
Hygiene .....	10 W A	.....	10 W A	.....	10 W A
Physical Diagnosis .....	.....	.....	11 H M	9 H M	.....
Surgical Anatomy .....	.....	.....	.....	.....	11 E L

**LABORATORY COURSES**

Pharmacology .....	1:30-5	1:30-5	1:30-5	1:30-5	.....
Pathology .....	1-5	1-5	1-5	1-5	1-5

**OPTIONAL LABORATORY COURSES**

Optional Laboratory Courses in the following subjects are offered during the year:

Anatomy, Anatomy of the Nervous System, Bacteriology, Embryology, Histology, Hygiene, Pathology, Pharmacology, Physiology, Physiological Chemistry, Cardiac Irregularities and Neural Pathology. Students desiring to elect any of these courses should consult with the Professor in charge.

# PROGRAM OF EXERCISES

1916-1917

## FIRST YEAR STUDENTS

### FIRST SEMESTER

### SECOND SEMESTER

Hours	October	November	December	January	February	March	April	May	June
8-9	Embryology, histogenesis, histology, organology, anatomy of the special sense organs and the nervous system.					Regional Anatomy			
9-10									
10-11						Lectures in Physiology			
11-12									
1-2	Gross human anatomy and dissections					Lectures in Bacteriology			
2-3						Laboratory work in Bacteriology			
3-4									
4-5									

## SUMMARY OF ENTIRE CURRICULUM BY HOURS

Giving the Actual Work Required of Each Student Graduating in  
June, 1917, Exclusive of Examination Hours.

Subjects	Lectures and Recitations	Demonstrations and Laboratory	Clinics	Total
Anatomy .....	125	450	.....	575
Histology and Embryology.....	90	180	.....	270
Anatomy of Nervous System and Special Sense Organs.....	40	90	.....	130
Physiology .....	145	160	.....	305
Physiological Chemistry .....	45	180	.....	225
Bacteriology .....	80	240	.....	320
Hygiene .....	45	.....	.....	45
Pharmacology, Materia Medica, and Therapeutics .....	210	90	.....	300
Pathology .....	144	160	.....	304
Internal Medicine.....	64	250	192	506
Pediatrics .....	32	20	32	84
Surgery .....	192	196	242	630
Obstetrics .....	90	72	.....	162
Gynecology .....	30	36	60	126
Ophthalmology .....	40	32	36	108
Otolaryngology .....	32	32	36	100
Mental and Nervous Diseases and Electrotherapeutics .....	30	78	105	213
Dermatology, with Syphilology ...	30	30	52	112
Medical Jurisprudence .....	30	.....	.....	30
<b>Totals .....</b>	<b>1,494</b>	<b>2,296</b>	<b>755</b>	<b>4,545</b>

## RULES CONCERNING EXAMINATIONS

I. *Honor System.* For a number of years all the examinations in this School have been under student control. Under this "Honor System" the faculty turns over to the students the complete supervision of all examinations. Each class elects an Honor Committee which has charge of this matter and which is responsible to the faculty. In case there is any infraction of rules, this committee tries the offender, and if necessary makes recommendations to the faculty for official action.



2. Examinations (either written or oral, or both) will be held at the close of each course or semester. The result of each examination must be reported in writing and within ten days to the secretary of the Faculty by the Professor in charge.

3. A student may be marked A, excellent ; B, good ; C, fair ; D, conditioned ; or E, not passed. A student may also be reported *INCOMPLETE*, in which case he may apply for examination or re-examination in the same subject at the close of the next course or semester or at a time set by the professor in charge, provided he has completed the work of the course. A student reported D "conditioned" can apply for re-examination in the same subject at the close of the next course or semester, or at the next officially announced time for the removal of conditions. Examinations for the removal of conditions are held during the first week of the session and immediately after the Christmas and spring vacations. A student reported as *ABSENT* may at the discretion of the professor in charge be given a special examination or comply with the rule governing the removal of conditions. A student reported E "not passed" cannot apply for re-examination until he has again taken the course in which he has failed.

4. All "Incompletes" and "Conditions" not passed within one year become "Not Passed."

5. Candidates for graduation failing in an examination will be allowed a re-examination before the entire Faculty, and failing in this, such students may again present themselves for examination at the expiration of a time which shall be determined by the Faculty, but which shall not be less than three months, nor longer than twelve months.

6. No student shall be recommended for graduation until all his required work is completed and all his examinations passed.

7. *Delinquent Students.*—The Faculty has appointed a Committee on Delinquent Students whose duty it is to take under consideration the cases of all students whose work has not been maintained at the proper standard. After necessary investigation has been made as to the cause of failure, this committee makes recommendations to the Faculty for official action.

## REQUIREMENTS FOR GRADUATION

To be granted the degree of Doctor of Medicine, a student must be twenty-one years of age, and possess a good moral character. He must have completed the required courses in laboratory work, and have passed satisfactory examinations on all required studies included in the full course of instruction. He must have been engaged in the study of medicine for a period of four years; he must have attended four full courses of medical lectures, *the last of which must have been in this school*, and have passed the required examinations. Graduates of other reputable medical schools, wishing to take a degree in this school, must regularly matriculate, fulfilling all entrance requirements, and do all work required in this school and not required in the school that has granted the diploma already held. The shortest term of residence for such graduates shall be one year. However, graduates of other reputable medical schools may, without becoming candidates for a degree, pursue any of the courses outlined in these pages.

Only those who are present in person may receive their diplomas on Commencement Day. Others who have satisfied all the requirements for graduation, including the payment of the graduation fee, will receive their degrees at the subsequent meeting of the Board of Regents.

## THE GRADUATE COURSES

The rapid development of medical science has necessitated the introduction of many new subjects into the curriculum, and this leads practitioners, who wish to keep abreast of the times, to return to the University in order to take special courses in the newer subjects. Moreover, at the present time some of the laboratory and demonstration courses mentioned in the preceding schedules are not given in many American medical colleges, and there have been frequent requests for admission to these courses from graduates of such schools. The frequency of these requests has led the Board of Regents to authorize the Faculty to admit medical graduates to any one or more of the regular courses when such graduates give evidence of their ability to profit by such instruction. In such cases the graduate student must pay ten dollars tuition for each course taken in addition to the ordinary laboratory expenses of such course.

Graduate work is also offered to students who have taken in full the required courses.

## FEES AND EXPENSES

**MATRICULATION FEE.**—For Michigan students, *ten dollars* for all others, *twenty-five dollars*. This fee is paid only once.

**ANNUAL FEE.**—For Michigan students, *one hundred and two dollars*; for others, *one hundred and twenty-two dollars*.

*The annual fee covers all necessary laboratory and demonstration course expenses.*

The Matriculation Fee, and the Annual Fee, must be paid in advance, and no student can be enrolled or admitted to examination for admission nor for removal of conditions until after such payment.

The following rules govern certain reductions in fees:

(1) Any student who withdraws voluntarily and in good standing not more than two weeks after his registration shall be entitled to a refund of his entire annual fee, together with the matriculation fee.

(2) A student who withdraws thus more than two weeks and less than eight weeks after his registration is entitled to a refund of one-half his annual fee.

(3) A student who withdraws thus more than eight weeks after the beginning and not later than the end of the first semester is entitled to a refund of 40% of his annual fee.

(4) A student who registers at the beginning of the second semester is required to pay 60% of the prescribed annual fee. The 40% thus refunded at enrollment shall be included in determining any further refund under (1) and (2).

(5) No refund or reduction of the matriculation fee is made, except in case of those withdrawing within the first two weeks after registration.

(6) No refund is made to any student expelled, suspended, or requested to withdraw on account of conduct or poor scholarship.

GRADUATION FEE. — For all alike, *ten dollars*. The graduation fee must be paid to the Treasurer of the University at least twenty-five days prior to the date of graduation.

POST-GRADUATE COURSES. — A tuition fee of *ten dollars* is charged for each course taken, in addition to the ordinary laboratory expenses of such course.

The total amount of fees paid to the University during the whole four years' course is, for Michigan students, about \$420.00; and for others, about \$515.00.

## LABORATORY AND DEMONSTRATION COURSE FEES

As noted above under the general title of Fees and Expenses the annual fee which is charged each student covers all necessary laboratory expenses and no further payment of laboratory fee is required. However, in case of students, other than medical students, who may desire to elect any of the Laboratory or Demonstration Courses in the Medical School, the following fees are charged to cover necessary expense:

Anatomy .....	\$21 00
Bacteriology .....	15 00
Physiological Chemistry .....	15 00
Histology .....	10 00
Physiology .....	5 00
Pharmacology .....	5 00
Pathology .....	10 00
Operative Surgery .....	10 00
Demonstration Course in Physical Diagnosis.....	5 00
Demonstration Course in Clinical Microscopy.....	5 00
Demonstration Course in Obstetrics.....	10 00
Demonstration Course in Neural Pathology.....	10 00
Demonstration Course in Ophthalmology.....	5 00
Demonstration Course in Oto-Laryngology.....	5 00

A deposit of the amount indicated for each of the above is required before the work of the course is begun.

**OTHER EXPENSES.**—Students obtain board and lodging in private families at from four to six dollars a week. Clubs are also formed in which the cost of board is from four to five dollars a week for each student. Students on arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Secretary's office, or at the building of the Students' Christian Association.

## UNIVERSITY HEALTH SERVICE

For some years a University Health Service has been in operation in which the services of four physicians and two nurses are available to all students. The mornings



are devoted to office hours for the men students while during the afternoons a woman physician is available for consultation by the women students or at such other times as may be made by special appointment. All office consultations, examinations, treatments and medicines are free, expenses for such services being met by the Medical Dispensary Fund.

While all office consultations, etc., are free, a charge of one dollar is made in case a student desires the aid of the university physician at his room during the day, and a fee of two dollars is made for night calls. Should it be necessary for a student to be sent to the University Hospital by the physicians of the health service, he may remain, if necessary, for sixty days and all hospital bills are paid out of the health service fund. In case students need the aid of the specialists at the hospitals special appointments may be made for them thus preventing needless loss of time.

The University also attempts in other ways to conserve the health of the students.

Every student taking work in either of the gymnasiums, undergoes a thorough physical examination, and those in whom physical defects are detected are referred to the Health Service. The physicians in charge of this service will obtain advice from specialists in the medical school when desirable.

The training in the gymnasium is so arranged as to remedy, as far as possible, physical defects. Work in the gymnasium is obligatory for all first year students in the Literary and Engineering Colleges. Consequently, all those students have the privilege of such an examination and advice, if needed, free of charge. Medical students, on account of more frequent exposure to infection, are expected to undergo a physical examination once during each semester of the four years. Any student in any

class may have a physical examination on application, and at an appointed time, at either of the hospitals.

The Dental Clinics are open to students, the only charge being for material used. All are advised to have their teeth examined at least once a year.

The water supply of Ann Arbor is examined ordinarily every week, both chemically and bacteriologically, and when it is under suspicion these examinations are made oftener, sometimes daily, and the student body is informed of the condition of the water when such need arises, by means of bulletins posted about the Campus. Since the public water supply was introduced in 1885, no student has been known to contract typhoid fever from this source, with but one exception. In 1894, the water became suddenly infected, and five cases of typhoid fever resulted, but these were mild and the source of infection was promptly detected and removed. On the slightest suspicion of infection of the water supply, students are advised to drink only boiled water until the source of contamination has been found, and the water been proved to be free from danger.

The air of class rooms and assembly halls is examined both chemically and bacteriologically from time to time, and in this way failure of ventilation is detected and reported.

Students are earnestly recommended to select their rooms with care, and with special reference to hygienic conditions. All rooms should be so arranged as to admit of free ventilation, and it is well to have a study room and bed room, the latter not to be heated either by day or night, but to be freely exposed from wide-open windows to the outdoor air.

Cases of infectious diseases likely to injure the health of others are excluded from class rooms and from University attendance. In case of threatened smallpox the

University offers free vaccination to all students, but those who neglect vaccination and become infected with this disease are subject to such disposition as the Health Officer of the city may direct.

Examination of sputum will be made for any student in actual attendance at the University at the laboratory of the University Health Service at any time free of charge. Anyone who has a cough which continues for a week or longer should take the sputum to the laboratory and have it examined.

Students are expected to obey the rules and regulations formulated by the University Committee on Sanitation. Failure to comply with these rules and regulations will be investigated, and may lead to discipline.

A course of lectures on General Hygiene is required of medical students, and is open to students from every department. These lectures extend through one semester, three times a week, and are attended usually by from 300 to 400 students. Special instruction along the lines of hygiene of sex is given to all students, men and women separately.

### **DEGREE OF MASTER OF SCIENCE IN PUBLIC HEALTH AND OF DOCTOR OF PUBLIC HEALTH**

In response to a growing demand for special training along the lines of public health work the following courses have been outlined. The first course leads to the degree of

#### **Master of Science in Public Health**

Candidates for this degree must possess the bachelor's degree or the degree of Doctor of Medicine. The course of instruction covers at least one academic year, beginning with the opening of the University in the fall, and continuing until the following June. Work in the Summer Session may be credited on this course, but a number of the fundamental courses are not given during the Summer Session. For this degree the following courses are required:

Public Water Supplies, three hours.

Water Purification, two hours.

Sewerage, two hours.

Sewage Disposal, two hours.  
Street Cleaning, Garbage Disposal, two hours.  
General Hygiene, three hours.  
Water Analysis, three hours.  
Food Analysis, three hours.  
General Bacteriology, three hours.  
Practical Bacteriology, five hours.  
Special Methods in Bacteriology, three hours.  
Pathogenic Protozoa, three hours.

### **Doctor of Public Health**

For the degree of Doctor of Public Health no course is outlined as the work required of an individual student will be in charge of a committee of the faculty who will arrange the course according to the special needs of the applicant for the degree.

Both the courses leading to a degree in Public Health are given in the Graduate School of the University and all students enrolled as candidates for them are subject to the rules and regulations of that School.

Applications for information concerning these courses should therefore be addressed to

PROFESSOR ALFRED H. LLOYD.  
Dean of the Graduate School, Ann Arbor.





# Graduates of 1916\*

Cornelius John Addison	Grand Haven
Effie Elizabeth Arnold, B.S.	Detroit
Robert Harper Baker, A.B.	Bay City
Edgar Voorheis Beardslee, B.S.	Ann Arbor
Morton Emmons Brownell, B.S.	Oneonta, N. Y.
Lona Jelena Zell Bulyea, A.B., <i>Acadia University, M.A., ibid</i>	Vancouver, B. C.
Duncan Campbell, B.S.	Munising
Clarence Arthur Christensen, B.S.	Benton Harbor
Harry Clayton Cowan, B.S.	Walla Walla, Wash.
Fred Plummer Currier, B.S.	Yale
Mihran Krikor Deirmenjian, A.B., <i>Anatolia College</i>	Detroit
Mary Fisher De Kruif, A.B., <i>Vassar College</i>	Ann Arbor
John Otto Dieterle, B.S.	Ann Arbor
Samuel Wright Donaldson, A.B., <i>University of Tennessee</i>	Rockford, Tenn.
William Matthew Dugan, Ph.B., <i>Brown University</i>	Fishkill, N. Y.
Anna Gertrude Dumont, A.B., <i>Vassar College</i> , West Cossackie, N. Y.	
William Ross Eaton, B.S., <i>McMinnville College</i>	Mulino, Ore.
Carl Walter Eberbach, A.B.	Ann Arbor
William John Egan, B.S.	Hurley, Wis.
L. D. Funk, A.B., <i>Albion College</i>	Athens
Evan Griffith Galbraith, B.S., <i>Valparaiso University</i>	Brooksville, Ky.
Julius Stanley Shourds Gardner, B.S.	Harbor Springs
William Henry Gordon, B.S.	Findlay, Ohio
Harry Clark Hackman	Ford City, Pa.
Fred Hazard Harrison, A.B., <i>Albion College</i>	Detroit
Harold Henderson, B.S.	Detroit
†John Augustus Herring, Jr., A.B., <i>Georgetown College</i>	Georgetown, Ky.
Dean Henry Jeffers	Wausaw, Wis.
Hubert Rudolph John, B.S.	Ann Arbor
Herbert Francis Kenny, A.B.	Duluth, Minn.
Lyle Boyle Kingery, B.S.	Buchanan
Avedis Hovanes Koumjian	Dorchester, Mass.

\* This list of graduates contains the names of all persons on whom the degree of Doctor of Medicine was conferred during the year 1916. A dagger (†) indicates that the degree was conferred at some other time than Commencement.

Anthony Henry Lange, B.S.	Detroit
Lorenzo Brown Lapsley, A.B.	Portland, Ore.
Henry Allen Lichtig, B.S.	Mt. Clemens
Margery Juline Lord, E.S.	Montreat, N. C.
Holton Murschamp Lowe, A.B., <i>Ohio Wesleyan University</i>	Norwalk, Ohio
Lyle Dee McMillan, A.B., M.S.	Indian River
John Roscoe McNutt	New Bethlehem, Pa.
Loren Kenneth Meredith	Des Moines, Ia.
Harold Abiud Miller, B.S.	Lansing
Edmund Christopher Mohr, B.S.	Bay City
Charles Arthur Mooney	Curtisville, Pa.
Helen Annette Moore, A.B.	Carthage, Ill.
John Jeremiah O'Leary, B.S.	Ann Arbor
Roland Winfield Riggs	Brookville, Pa.
James Bradford Seeley, B.S.	Detroit
Harold William Shutter, B.S.	Grand Rapids
Howard Lee Smallman, B.S.	Ellicottville, N. Y.
Robert James Snider, Jr., B.S.	Wheeling, W. Va.
Karl Sutherland Staatz	Tacoma, Wash.
Clair Lazarus Stealy	Charlotte
Louis Desenberg Stern, A.B.	Kalamazoo
William Manning Tappan, A.B., <i>Mercer University</i>	White Plains, Ga.
Warren Taylor Vaughan, A.B.	Ann Arbor
William R. Vis, B.S.	Zeeland
Louis Edward Walsh	St. Ignace
Damon Orian Walthall, B.S.	Paola, Kans.
Walter Fletcher Watton, B.S.	Holly
Herbert Olander Westervelt, B.S.	Ann Arbor
William Westrate, A.B., <i>Hope College</i>	Holland
Glenn Joe Wilmore, B.S.	Van Wert, Ohio
Lowell Lorrimor Youngquist, B.S.	Marquette

# Students—1916-1917

## RESIDENT GRADUATES

LeRoy Newton Fleming A.B., *Miami University*, M.D., *Johns Hopkins University* Portsmouth, O.  
 Nobuyuki Fukase, M.D., *Japan* Hakodate, Japan  
 Narayan Subrao Hardikar, M.C.P.S., *Calcutta, India*, M.S. Hubli, Bombay, India  
 George Arthur Seybold, M.D. Jackson  
 Carl Cleghorn Warden, Ph.B., M.D. Ann Arbor  
 Herbert Tock White, M.D. New Lothrop

## FOURTH YEAR STUDENTS

Charles May Newman Anderson, B.S., *Univ. of Mich.*, 1916 Nezperce, Idaho  
 Alfred Leston Arnold, Jr., College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-13 Owosso  
 Myron George Becker, Jr., B.S., *Univ. of Mich.*, 1914, Benton Harbor  
 Clarence Austen Berge, A.B., *University of Washington*, 1909 Davenport, Wash.  
 Margaret Helen Bigby, A.B., *University of South Carolina*, 1912 Columbia, S. C.  
 Max A. Blumer, B.S., *Univ. of Mich.*, 1915 Pittsburgh, Pa.  
 Warren Conrad Breidenbach, B.S., *Univ. of Mich.*, 1915, Dayton, Ohio  
 John Thomas Burns, B.Lit., *Notre Dame University*, 1913 Kalamazoo  
 Henrietta Anne Calhoun, B.S., *University of Illinois*, 1901, A.M., Ann Arbor  
*ibid*, 1903  
 Jacob Harold Chalat, B.S., *Univ. of Mich.*, 1915 Detroit  
 Herman Harrison Cole, B.S., *Univ. of Mich.*, 1915 Springfield, Ill.  
 Leon Basil Cowen, B.S., *Univ. of Mich.*, 1915 Harrisburg, Pa.  
 Roland Spuhler Cron, B.S., *Univ. of Mich.*, 1915 Manistee  
 David Christian Eisele, B.S., *Univ. of Mich.*, 1915 Albany, N. Y.  
 Mary Josephine Erickson, B.S., *Univ. of Mich.*, 1915 Hancock  
 Lynn Adelbert Ferguson, B.S., *Univ. of Mich.*, 1915 Sparta  
 Walter Abram Fort, B.S., *Univ. of Mich.*, 1915 Centerville  
 August Ernst Gehrke, B.S., *Univ. of Mich.*, 1915 Detroit  
 Norris William Gillette, A.B., *Harvard University*, 1913 Toledo, Ohio  
 William Stephen Gonne, B.S., *Univ. of Mich.*, 1915 Detroit  
 John Black Grant, A.B., *Acadia College*, 1912 Halifax, Nova Scotia  
 Jack Harry Hamill, B.S., *Univ. of Mich.*, 1915 Bolivar, Pa.

- Austin William Heine, B.S., *Univ. of Mich.*, 1915 Mount Clemens  
 Benjamin George Holtom, College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-13 Battle Creek  
 Jack Walker Jones, A.B., *Mercer University*, 1913 Canton, Ga.  
 Rolla George Karshner, B.S., *Univ. of Mich.*, 1915 Big Rapids  
 Sarkis Hovannes Kashkashian, *Anatolia College*, 1910-12 Yozgat, Turkey  
 Harther Lewis Keim, B.S., *Univ. of Mich.*, 1915 Steelton, Pa.  
 Harold Lang Kennedy, B.S., *Univ. of Mich.*, 1916 Spokane, Wash.  
 Karm Chandra Kerwell, *University of Punjab, India*, 1909-12 Dhesian Kahna, India  
 Garabed Hagop Koumjian, B.S., *Univ. of Mich.*, 1915 Petoskey  
 Louis Aaron Kustin, B.S., *Univ. of Mich.*, 1915 Cleveland, Ohio  
 Roy Lee Laird, B.S., *Univ. of Mich.*, 1915 Spokane, Wash.  
 Bertil Thoneliuss Larson, College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-13 Crystal Falls  
 Joseph Stanley Leszynski, College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-13 Ann Arbor  
 Tsoong Ching Lieu, B.S., *Univ. of Mich.* Foochow, China  
 Maurice Clock Loree, *Albion College*, 1911-13 Ithaca  
 George McClure, B.S., *Univ. of Mich.*, 1915 Calumet  
 Robert Bruce Macduff, *University of Chicago*, 1910-11; 1912-13 Detroit  
 Thomas Meriwether Marks, *Univ. of Kentucky*, 1911-13; SS., *Univ. of Mich.*, 1915 Lexington, Ky.  
 Hugh Raymond Meyer, B.S., *Univ. of Mich.*, 1915 Ann Arbor  
 Vasil Prodromos Moisides, A.B., *Anatolia College*, 1912 Detroit  
 John Hulst Müller, B.S., *Univ. of Mich.*, 1915 Grand Rapids  
 Raymond James Nutting, B.S., *Ohio University*, 1913 Reinersville, O.  
 Russell Aaron Alger Oldfield, B.S., *Univ. of Mich.*, 1915 Bay City  
 Russell Henry Oppenheimer, A.B., *Ohio State University*, 1911 Fremont, Ohio  
 Algernon Arthur Palmer, *Michigan Agriculture College*, 1910-12; College Lit., Sc., and Arts., *Univ. of Mich.*, 1912-13 Chelsea  
 John Ryer Poppen, *Rutgers College*, 1910-11; *Columbia University*, 1910-12 Hamilton  
 Frank Perryn Raiford, A.B., *Lincoln University*, 1913 Atlanta, Ga.  
 Rudolph Hermann Ruedemann, B.S., *Univ. of Mich.*, 1915 Albany, N. Y.  
 James Floyd Runner, B.S., *Univ. of Mich.*, 1914 Grand Rapids  
 Viola Pevey Russell, A.B., *Vassar College*, 1913 Wellesley, Mass.  
 Edwin Rutherford Scarboro, A.B., *Mercer University*, 1912 Tifton, Ga.  
 William Ira Searles, A.B., *Univ. of Mich.*, 1911 Ann Arbor  
 Loren William Shaffer, B.S., *Univ. of Mich.*, 1916 Ligonier, Pa.  
 Bert H. Shepard, *Albion College*, 1910-12; College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-13 Lake Odessa

George Douglas Treadgold, College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-13 Port Huron  
 Russell William Ullrich, B.S., *Univ. of Mich.*, 1915 Mount Clemens  
 Rex Edward VanDuzen, B.S., *Alma College*, 1913 Breckenridge  
 Ralph Marean Vincent, B.S., *Univ. of Mich.*, 1915 Binghamton, N. Y.  
 Albert DeForest Wickett, B.S., *Univ. of Mich.*, 1914 Mount Pleasant  
 Pedro Juan Zamora, College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-13 Aguadilla, P. R.

## THIRD YEAR STUDENTS

Floyd McJunkin Allen, *Grove City College*, 1912-14 Keisters, Pa.  
 José Alum, A.B., *Univ. of Mich.*, 1915 Arecibo, P. R.  
 Charles Edward Anderson, B.S., *Univ. of Mich.*, 1916 Ironwood  
 Govind Venkatesh Ankliker, M.C.P.C., *College Physicians and Surgeons, Calcutta* Bombay, India  
 Donald Kay Bacon, B.S., *Univ. of Mich.*, 1916 St. Paul, Minn.  
 Theodore Swift Barnett, B.S., *Univ. of Mich.*, 1916 Potsdam, N. Y.  
 Elden Charles Baumgarten, A.B., *Univ. of Mich.*, 1915 Richmond  
 Paul Webley Beaven, A.B., *Univ. of Rochester*, 1913 Rochester, N. Y.  
 Charles Ancil Bosworth, B.S., *Univ. of Mich.*, 1916 Paola, Kans.  
 Clifford Wayne Brainard, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14 Battle Creek  
 Robert Ellsworth Brown, A.B., *University of Illinois*, 1910 Danville, Ill.  
 Laura Agnes Buck, A.B., *Syracuse University*, 1913 Naples, N. Y.  
 Max Ronald Burnell, *Albion College*, 1912-14 Flint  
 George J. Busman, B.S., *Univ. of Mich.*, 1916 Coopersville  
 Joseph Rogers Darnall, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14 Washington, D. C.  
 Herbert Daniel Dieterle, A.B., *Univ. of Mich.*, 1915 Ann Arbor  
 Frank Merle Dryden, A.B., *Univ. of Nebraska*, 1913 Battle Creek  
 Arvid Waldemar Erickson, B.S., *Univ. of Mich.*, 1916 Ironwood  
 Bert Fellows, College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-13 Lansing, Ia.  
 John Frederick Edward Foss, B.S., *Univ. of Mich.*, 1916 Dunkirk, N. Y.  
 Ralph James Frackelton, B.S., *Univ. of Mich.*, 1916 Fenton  
 Helen L. B. Gage, B.S., *Univ. of Mich.*, 1916 Wixom  
 William John Greenfield, A.B., *Hope College*, 1914 Clara City, Minn.  
 Roy Mark Greenthal, B.S., *Univ. of Mich.*, 1916 Detroit  
 Glenn Grieve, College Lit., Sc., and Arts, *Univ. of Mich.* Fowlerville  
 Merit Donald Haag, B.S., *Univ. of Mich.* Wauseon, Ohio  
 Robert Joseph Hall, College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-14 Detroit  
 Campbell Harvey, A.B., *Univ. of Mich.*, 1911 Detroit  
 Clyde Knapp Hasley, A.B., *Univ. of Mich.*, 1915 Monroe  
 Parker Heath, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14 Ann Arbor



- George Rudolph Herrmann, B.S., *Univ. of Mich.*, 1916  
Fort Wayne, Ind.
- Lynn Arthur Hoag, B.S., *Univ. of Mich.*, 1913  
Ann Arbor
- Mathias Sylvester Hurth, A.B., *Valparaiso Univ.*, 1914  
Watkins, Minn.
- Carroll C. Hyde, B.S., *Alma College*, 1914  
Addison
- Charles Raymond Illick, A.B., *Taylor University*, 1915  
Hulmeville, Pa.
- Herbert Alfred Judson, A.B., *Park College*, 1913  
Hangchow, China
- Rockwell M. Kempton, *Hillsdale College*, 1912-14  
North Adams
- Maurice Joel Lieberthal, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14  
Ironwood
- Harry Lundgren, B.S., *Univ. of Mich.*, 1916  
Ironwood
- William Kerr McCandliss, A.B., *Park College*, 1912  
Hoihow, China
- William Rennie McKinnon, B.M.E., *Univ. of Mich.*, 1910  
Ann Arbor
- Clement Hoover Marshall, B.S., *Univ. of Mich.*, 1916  
Greenville, Ohio
- Donald Manly Morrill, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14  
Big Rapids
- Moses Emmett Morton, College Lit., Sc., and Arts, *Univ. of Mich.*  
Lowndesboro, Ala.
- Arthur Bernard Norton, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14  
Ann Arbor
- Paul Henry Piper, B.S., *Univ. of Mich.*, 1914  
Alamo
- Harry Jay Prall, *Albion College*, 1912-14  
Pontiac
- Daniel Ignatius Clyde Reynolds, B.S., *Univ. of Mich.*, 1916  
Ann Arbor
- Tom Howard Robertson, *Hillsdale College*, 1912-13; Coll. Lit., Sc., and Arts, *Univ. of Mich.*, 1913-14  
Ann Arbor
- Juan Rodriguez, B.S., *Univ. of Mich.*, 1916  
Manati, P. R.
- John Pirrie Shearer, *Albion College*, 1912-14  
Pontiac
- Edwin Rogers Smith, A.B., *Indiana Univ.*, 1914  
Richmond, Ind.
- James Harold Smith, B.S., *Univ. of Mich.*, 1916  
Coudersport, Pa.
- Harry Brooks Spaulding, B.S., *Okla. Agri. & Mech. Coll.*, 1910  
Ralston, Okla.
- James Mark Stanton, *Earlham College*, 1912-14  
Richmond, Ind.
- James Russell Stein, B.S., *Univ. of Mich.*, 1916  
Detroit
- Jane Darling Stevenson, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14  
Akron, O.
- Washington Parker Stowe, B.S., *Ohio Northern Univ.*, 1910  
North East, Pa.
- Chow Fong Tang, B.S., *Univ. of Mich.*, 1916  
Hangchow, China
- Lester Claire Todd, A.B., *Tabor College*, 1910  
Detroit
- Thomas Lawrence Tolan, B.S., *Univ. of Mich.*, 1916  
Ironwood
- Eugene Frederick Traub, B.S., *Univ. of Mich.*, 1916  
Dubuque, Ia.
- Vivian Arthur Van Volkenburgh, B.S., *Univ. of Mich.*, 1916  
Detroit
- Ruth Cecilia Wanstrom, A.B., *Univ. of Mich.*, 1914  
Rockford, Ill.

- Robert William Watson, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14 Ludington  
 Archibald Henderson Watt, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14 Providence, R. I.  
 Leland Stanford Welbourn, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14 Union City, Ind.  
 MacNaughton Wilkinson, B.S., *Univ. of Rochester*, 1914 Clarkson, N. Y.  
 Gaillard Peter Willett, B.S., *Univ. of Mich.*, 1916 Elmore, Ohio  
 Amelia Tabitha Wood, A.B., *Univ. of Nebraska*, 1913; B.Sc., *Nebraska Wesleyan University*, 1913 University Place, Nebr.

## SECOND YEAR STUDENTS

- Catherine Parke Acklen, B.S., *Vanderbilt University*, 1915 Nashville, Tenn.  
 Arthur Darling Allen, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Savannah, Ga.  
 Einer Bjarne Anderson, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-15 Ann Arbor  
 Walter Frederick Bach, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Sebawaing  
 Carl Egbert Badgley, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Dunkirk, N. Y.  
 Harold Draegert Barnard, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Constantine  
 Harry Francis Becker, *Lombard College*, 1908-09, 1910-11; *Univ. of Illinois*, 1913-14 Knoxville, Ills.  
 Lawrence George Beinhauer, *Univ. of Pittsburgh*, 1913-15 Pittsburgh, Pa.  
 William McFadden Bell, *Penn. State College, University of Illinois* Ann Arbor  
 Norman Charles Bender, College Lit., Sc., and Arts., *Univ. of Mich.*, 1913-15 Buffalo, N. Y.  
 Richard Henry Bennett, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Laurium  
 Herman Eugene Bozer, A.B., *Univ. of Mich.*, 1916 Logansport, Ind.  
 John Patrick Caffey, A.B., *Univ. of Mich.*, 1916 Salt Lake City, Utah  
 Joseph Cohen, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Brooklyn, N. Y.  
 Isador Mayer Cohn, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Spokane, Wash.  
 Theodore Hill Conklin, A.B., *Univ. of Mich.*, 1914 Kingston, N. Y.  
 Edward John Coram, B.S., *Univ. of Idaho*, 1915 Grangeville, Ida.  
 Cecil Corley, B.S., *Valparaiso University*, 1914 Herrick, Ills.  
 John Russell Crossland, *Univ. of Iowa*, 1912-13, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 St. Joseph, Mo.  
 David Samuel Dann, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Detroit

- Luis Manuel Debayle, B.A., *Institute National de Occident de Leon*, Leon, Nicaragua
- Casimir Anthony Domzalski, B.A., *Univ. of Detroit*, 1915 Detroit
- Donald Welsh Gudakunst, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Saginaw
- Jose Guerrero, A. B., *Institute National de Occident de Leon*, Leon, Nicaragua
- George Ricker Hageman, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Spokane, Wash.
- Edgar Schall Henry, A.B., *Grove City College*, 1912 Apollo, Pa.
- Douglas Thomas Hoffman, *Northwestern University, University of Wisconsin, University of Chicago*, College Lit., Sc., and Arts, *Univ. of Mich.* Wilmette, Ills.
- William Edward Howes, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Ann Arbor
- Herbert Leonard Huffington, *Illinois State Normal University, University of Illinois* Normal, Ills.
- Leo George Jentgen, *Heidelberg University*, 1911-13 Detroit
- Henry Adolph Johnson, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Ishpeming
- Wayne Alvin Johnston, College Lit., Sc., and Arts, *Univ. of Mich., University of Illinois* Champaign, Ills.
- Joseph Lawrence Jones, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Kansas City, Mo.
- Floyd Burton Knapp, *Olivet College*, College Lit., Sc., and Arts, *Univ. of Mich.* Holland
- Thomas John LeBlanc, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-15 Sault Ste. Marie
- Tan Piew Lee, A.B., *Taylor University*, 1916 Singapore, Straits Settlements
- Elmore F. Lewis, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Vandalia
- William Henry Ludwig, Ph.C., *University of Washington*, 1913 Tacoma, Wash.
- L. Mason Lyons, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-15 Kansas City, Mo.
- Richard Moore McKean, A.B., *Univ. of Mich.*, 1916 Detroit
- John McDowell McKinney, Jr., College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-15 Washington, D. C.
- Margaret Augusta Miller, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Stevensville, N. Y.
- Maurice Clark Miller, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Bay City
- Martin Fitch Miner, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Three Oaks
- Henry Moes, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Zeeland

- Carlton Stewart Nash, A.B., *University of Rochester*, 1915  
Ontario Center, N. Y.
- Elsie Lois Backus Novy, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Ann Arbor
- Frank Orel Novy, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Ann Arbor
- Robert Lev Novy, A.B., *Univ. of Mich.*, 1913, M.S., *ibid*, 1914  
Ann Arbor
- Henry Rust O'Brien, A.B., *Washburn College*, 1913, A. M., *Kansas University*, 1915  
Lawrence, Kans.
- Ira Dawson Odle, B.S., *Purdue University*, 1910  
Pine Village, Ind.
- Earl Dorland Osborne, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Petoskey
- Antonio Panayotides, A.B., *Anatolia College*, 1912  
Ann Arbor
- Horace Wray Porter, E. E., *Lehigh University*, 1912  
New York City
- Joseph Raymond Pugh, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Ann Arbor
- Charles Frederic Roche, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Bay City
- Donald Carmer Rockwell, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Kalamazoo
- Carl Elias Roser, College of Engineering, *Univ. of Mich.*, 1913-14, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-15  
Lansing
- Raymond Dominic Schirack, A.B., *Ohio State University*, 1912  
St. Henry, Ohio
- John Albert Sheldon, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-14  
Plainville
- Reuben Wilson Shelley, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Newfame, N. Y.
- Clarence Emerson Sherwood, B.S., *Huron College*, 1914  
Doland, S. D.
- Sidney Jerome Shipman, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Ann Arbor
- Emory Walter Sink, A. B., *Univ. of Mich.*, 1911, M.S., *ibid*, 1915  
Ann Arbor
- William Clare Skinner, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Howell
- Arthur Reve Smith, A.B., *Univ. of Mich.*, 1913  
Great Bend, Kans.
- John Glen Smith, College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-14  
Ann Arbor
- Theodore Louis Squier, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Battle Creek
- Leonard Francis Thalner, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Ironwood
- Roger W. Walker, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Detroit
- Henry John Woessner, Jr., College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Ann Arbor

- Carroll Spaulding Wright, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15      Ann Arbor  
 Jerome Zeigler, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15      Maysville, Ky.

### FIRST YEAR STUDENTS

- Theodore Wright Adams, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16      Ann Arbor  
 George Chandler Adie, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15      Barre, Vermont  
 Floyd Pierpont Allen, Summer Session, *U. of M.*, 1913, *Mich. State Normal College*, 1911-13      Ridgeway  
 Walter Owen Allen, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-15      Warsaw, Ind.  
 Manuel Demetrio Amador, B.S., *Pennsylvania State College*, 1916      Isabela, Porto Rico  
 George Robert Anderson, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15      Cassopolis  
 Fred William Andreas, B.S., *Heidelberg Univ.*, 1915      Cleveland, O.  
 Robert Elmer Anslow, *Olivet College*, 1914-16      Ionia  
 Donald Jerome Barnes, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-15, *Univ. of Ill.*, 1915-16      Pekin, Ill.  
 Samuel William Becker, College Lit., Sc., and Arts, *Univ. of Mich.*, 1912-13, 1915-16      Benton Harbor  
 Theodore Perry Bishop, A.B., *Hillsdale College*, 1913      Hillsdale  
 Ralph Edwin Boice, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16      Toledo, Ohio  
 James Isadore Boland, *Notre Dame Univ.*, 1914-16      Lansing, Mich.  
 Florence A. Browne, A.B., *Vassar*, 1908      Bay City  
 George Maxwell Brown, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16      Deerfield  
 Melvin Joseph Budge, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16      Coleman  
 Alfred Joseph Burr, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16      Manistique  
 Nils Olof Byland, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16      Battle Creek  
 Herbert Ezra Chamberlain, A.B., *Albion College*, 1916      Howell  
 Fitzgerald Hartan Clark, College of Pharm. *Univ. of Mich.*, 1914-15, College of Lit., Sc., and Arts, *ibid.*, 1915-16      Jamestown, N. Y.  
 Robert Madden Cleary, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16      Lockport, N. Y.  
 Ernest Edwin Cody, A.E., *Albion College*, 1903, A.M., *Univ. of Mich.*, 1912      Ann Arbor  
 Russell Jay Collier, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16      Vicksburg



- Arthur Edward Cone, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Toledo, Ohio
- Douglas Squire Corpron, *Univ. of Ore.*, 1914-16 North Yakima, Wash.
- Alfred William Coxon Jr., *Univ. of Pittsburgh*, 1913-16 Pittsburgh, Pa.
- Ethan B. Cudney, Summer Sessions, *U. of M., Mich. State Normal College*, 1914-16 Owosso
- John Higgins Curtin, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Chateaugay, N. Y.
- Frank Edward Curtis, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Big Rapids
- Carleton Dean, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Howell
- Thomas W. Durbin, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 McClure, Ohio
- Abel de Juan, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 San Juan, Porto Rico
- Frank Leo Doran, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Grand Rapids
- George Christopher Doyle, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16 West Duluth, Minnesota
- Lawrence William Faust, *Univ. of S. Dakota*, 1914-16, *Univ. of Mich.*, 1916-17 Deadwood, S. Dakota
- John Thomas Ferguson, Ph.G. *Ferris Institute*, 1915, College Lit., Sc., and Arts, *Univ. of Mich.*, 1915-16 Mt. Morris
- Russell Leslie Finch, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16 Marquette
- Linus Joseph Foster, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16 Ann Arbor
- John Louis Garvey, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Iron Mountain
- Lambert John Geerlings, A.B., *Hope College*, 1916 Reeman
- Harvey Warren Goddard, A. B., *Univ. of Mich.*, 1912, M.S., *ibid.*, 1915 Ann Arbor
- Fred William Dickson Goundry, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Chateaugay, N. Y.
- John Miller Graff, *Indiana State Normal School*, 1913-15, College Lit., Sc., and Arts, *Univ. of Mich.*, 1915-16 Black Lick, Pa.
- Ruby Rutherford Green, Summer Session, *U. of M., Michigan State Normal College*, 1914-16 Lansing
- Ward Walter Harryman, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16 Owosso
- Lloyd Commodore Hart, College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-12, 1915-16 Kokomo, Ind.
- John Frank Haughey, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16 Battle Creek
- Ralph Ernest Hawley, A.B., *Univ. of Mich.*, 1909 Ann Arbor

- Lawrence William Hayes, *Marquette Univ.*, 1913-14, *Univ. of Mich.*, 1914-16 Grand Rapids
- Mauritz Gustaf Hedin, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16 Ironwood
- Howard Hamden Heffron, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Metamora, Ohio
- Hubert Messner Heitsch, Eng. College, *Univ. of Mich.*, 1912-13, *Michigan Agricultural College*, 1915-16 Pontiac
- Clarence Scott Hickey, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Toledo, O.
- Henning Adolph Hill, A.B., *Augustana College*, 1916 Marquette
- Carlton Russell Hills, A.B., *Albion College*, 1916 Berkeley, California
- Alberto Salomon Hoheb, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Santurce, Porto Rico.
- Frances Marie Howell, A. B., *Barnard College*, 1915 Paterson, N. J.
- Henry D. Hunderman, A.B., *Univ. of Mich.*, 1916 Grand Rapids
- Paul Mills Ireland, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Fort Sam Houston, Texas
- John Tracy Kaye, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16 Marquette
- Joseph Angelus Kervin, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Bradford, Pa.
- Cecil Arden Kingman, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16 Forest, Ohio
- Augustus Kirchner, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Detroit
- James Sybert Klump, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Saginaw
- Alton Lester Kolpien, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16 Dunkirk, N. Y.
- Clarence Andrew Kretzschmar, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Detroit
- Donald Francis Kudner, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Lapeer
- Hippocrates Marco Kyprianides, A.B., *Anatolia College*, 1913 Amassia, Turkey
- Grant Harrison Laing, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Iron Mountain
- Edward O'Hearn Leahy, *Defiance College*, 1914-16 Liberty Center, Ohio
- Sophronous Ahimus McCutcheon, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Bradford, Pa.
- Earl William McKelvey, *Univ. of Pittsburgh*, 1912-15 Pittsburgh, Pa.
- Gordon Thorburn MacPherson, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Butte, Montana
- Kenneth C. McPherson, College Lit., Sc., and Arts, *Univ. of Mich.*, 1915-16 Deadwood, S. Dak.
- Jacob Manting, *Hope College*, 1912-15 Grand Haven

- Sarah Marcus, A.B., College for Women, *Western Reserve Univ.*, 1916  
Cleveland, Ohio
- Isadore Jack Mehlman, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Toledo, Ohio
- Elmer Forrest Merrill, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Joliet, Ill.
- Hazen Lawrence Miller, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Highland Park
- Norman Fritz Miller, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16  
Iron Mountain
- William Jean Moerdyk, A. B., *Hope College*, 1913  
Zeeland
- George Floyd Moore, *Ill. St. Normal Univ.*, 1908-11  
Normal, Ill.
- Hugh Ransom Moore, *Albion College*, 1914-16  
Union City
- Norman Benedict Muhme, *Ohio State Univ.*, 1914-15, College Lit., Sc., and Arts, *Univ. of Mich.*, 1915-16  
Toledo, Ohio
- Gentok Nakai, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16  
Osaka, Japan
- Harry Monroe Nelson, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Kane, Pa.
- Alfred Nesler, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Dubuque, Iowa.
- Paul Barkley Newcomb, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
West Unity, Ohio
- Hope Hewitt Nicholson, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Luther
- William Stephen O'Donnell, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Detroit
- Joseph Palma, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Lafayette, Ind.
- Charles Ovide Paradis, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Bessemer
- Louis Lieber Rosenberg, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15  
Toledo, Ohio
- Howard Frederick Rowley, *Univ. of Rochester*, 1914-16  
Rochester, N. Y.
- Leon Rubin, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Terre Haute, Ind.
- Samuel Jether Rubley, *Hillsdale College*, 1913-16  
Ann Arbor
- Nathan Salon, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Ft. Wayne, Ind.
- Fred John Schuster, *Case Technical School*, 1913-15, College Lit., Sc., and Arts, *Univ. of Mich.*, 1915-16  
Cleveland, O.
- Dean Charles Scroggie, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16  
Charlevoix
- Charles Raymond Smith, *Univ. of Pittsburgh*, 1914-16  
Coraopolis, Pa.
- Harold Walling Smith, *Annapolis Naval Academy*, 1914-15, College Lit., Sc., and Arts, *Univ. of Mich.*, 1915-16  
Campbell, N. Y.

- Glenadine Calkins Snow, B.S., *Kalamazoo College*, 1913 Ypsilanti  
 Louise Sophia Stahmer, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-15 Brooklyn, N. Y.  
 Allen Chronister Starry, *Whitman College*, 1914-16 Walla Walla, Wash.  
 Marion Hope Stevenson, A.B., *Indiana Univ.*, 1915 Akron, Ohio  
 William David Stinson, A.B., *Univ. of Mich.*, 1916 Mt. Vernon, Ind.  
 Emil Alfred Stoller, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Bremen, Ind.  
 Rhudolph Webber Streat, B.S., *Michigan Agricultural College*, 1914 Flint  
 Henry Takacs, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Belenyes, Hungary  
 Me-inug Ting, *Mt. Holyoke College*, 1914-16 Shanghai, China  
 Harriet Elizabeth Twombly, A.B., *Leland Stanford Univ.*, 1908 Gustine, California  
 Cornelius Elias VanderVelde, College Lit., Sc., and Arts, *Univ. of Mich.*, 1911-15 Dunkirk, N. Y.  
 Ruth Evangeline Wagner, B.S., *Michigan Agricultural College*, 1916 Oberlin, Ohio  
 Harold Graves Waller, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Little Valley, N. Y.  
 Frank Andrew Weiszer, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Detroit  
 Charles Neil Weller, College Lit., Sc., and Arts, *Univ. of Mich.*, 1913-16 Ithaca  
 Max Wershow, D.V.M., *Ohio State Univ.*, 1913 Columbus, Ohio  
 Fred Burnell Wight, *Alma College*, 1914-15, College Lit., Sc., and Arts, *Univ. of Mich.*, 1915-16 Yale  
 Carl J. Yeisley, College Lit., Sc., and Arts, *Univ. of Mich.*, 1914-16 Port Clinton, Ohio

# Summer Session in the University of Michigan Medical School

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JULY 2—AUGUST 10.  
1917.

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The Summer Session of the Medical School of the University of Michigan for the year 1917 will begin Monday, July 2, and will close Friday, August 10. It is open to graduates in medicine, undergraduate students registered in recognized medical colleges, and to students enrolled in other Schools or Colleges of this University.

The courses offered are classified as *special*, designed for graduates and advanced students of medicine, for which no credit will be granted, and *credit* courses, which duplicate certain portions of the regular curriculum, and on the satisfactory completion of which, credit will be given.

No allowance for time will, however, be given for work done in the Summer Session. A student can not, therefore, shorten his residence in college by attending one or more Summer Sessions, since the legal requirements for the degree of Doctor of Medicine prescribe four years attendance upon medical lectures during the regular session.

In the laboratory and demonstration courses offered, opportunity will be given the student to do work for himself, under the personal direction of the instructor. He may thus familiarize himself with the apparatus and instruments used in the laboratories and in diagnostic work, and become conversant with their uses. The abundant clinical material of the University Hospitals will be at the disposal of the instructors offering special clinical courses, and will be freely used in diagnostic work, bedside instruction, and general clinics.

In the Medical School the fee is \$16.00 for laboratory and demonstration courses, and \$26.00 for the more strictly clinical courses, regardless of the number of courses taken. In addition to these fees there is in the case of laboratory and demonstration courses a special fee charged to cover cost of material and breakage. The size of this fee depends upon the course elected, and may be ascertained by reference to the description of the various courses offered.



Any one of the courses announced in this School may be withdrawn at the option of the instructor in the event that less than five students make application for it.

No course herein offered can be completed in less than the stated time.

Undergraduates enrolled in other medical schools who desire credit for courses taken may have the same sent direct to the dean of the school in which they are registered.

In order to register for work in the Summer Session of the Medical School the student must enroll with the secretary of the School and pay his fees in the office of the University Treasurer. No student will be admitted to classes except on presentation of the Treasurer's receipt.

The Medical Library, containing over 30,000 volumes, as also the general library, will be open to students and graduates registering in the Summer Session. The library will be open daily, except Sunday, from 7:45 A. M. to 10 P. M.

All letters of inquiry should be addressed to Professor C. W. EDMUNDS, Secretary of the Medical School.

## ANATOMY

1. *Laboratory Work in Human Anatomy*.—Dr. JOHN L. WORCESTER, Mr. STACEY R. GUILD, and assistant, daily from 8 to 12, and 2 to 5, in the Anatomical Laboratory. Laboratory fee of \$7.00 in addition to tuition fee.

This course is arranged so as to present the work given in the regular curriculum of the Medical School, and is open to candidates for the degree of Doctor of Medicine, and also the work as given in the regular curriculum of the College of Dental Surgery, open to candidates for the degree of Doctor of Dental Surgery. Undergraduates will receive credit on passing the final examination. The course consists of the dissection under supervision of either one-half or one-third of the body as the student may elect. Students who have previously dissected the whole body would probably be able to complete one-half the body during the session. In addition to the regular course, opportunity will be given to undertake special study of any region of the body, the character and extent of such work being modified to suit the need of the individual applicant. Prepared bones are loaned to each student and are kept by him throughout the course so that he may familiarize himself with the osteological features of the parts under consideration during their dissection. Conferences and quizzes will be held at frequent intervals, and use will be made of models, wet and dry preparations, to further elucidate the subject.

2. *Regional and Topographic Anatomy*, based on frozen sections. Lectures and recitations. Mr. STACY R. GUILD, daily from 8 to 12, and 2 to 5, in the Anatomical Laboratory.  
During this course each student prepares a set of about 40 tracings made from frozen sections, showing the outline and relations of the principal structures of the body.
3. *Lectures, Recitations, and Laboratory Work in Embryology and Histology*. Mr. WAYNE J. ATWELL, daily from 8 to 12, and 1:30 to 3:30, in the Anatomical Laboratory. Laboratory fee of \$7.00 in addition to tuition fee.

This course is the same as that given in the regular curriculum to the students of the College of Dental Surgery. Undergraduates will receive credit on passing the final examination. The course embraces a consideration of the structure of the cell, cell mitosis, the histogenesis and structure of the elementary tissues, the organs of secretion and excretion, the digestive and respiratory organs, and in the latter portion of the course especial attention is given to the development and structure of the oral and nasal cavities, the teeth and peridental tissues.

## BACTERIOLOGY

1. *Laboratory Work in Bacteriology*.—Mr. A. H. EGGERTH daily from 8 to 12, and from 1 to 5, in Bacteriological Laboratory. Laboratory fee of \$15.00 in addition to tuition fee.

This course is the same as that required of medical students. Those taking it for credit toward a university degree will be required to pass an examination at the end of the course, submitted by Professor F. G. NOVY.

The object of this course is to make the student familiar with the methods of detection, isolation, and identification of the pathogenic micro-organisms. Lectures are given on the forms of bacteria, their classification, structure, multiplication, and reproduction, their requirements of growth, and their chemical products. The principles of sterilization and disinfection are brought out, and especial emphasis is given to their practical application. The latter half of the course deals exclusively with pathogenic organisms. The way in which bacteria produce disease, their attenuation, and the production of immunity are carefully explained. The sources of infection and methods of prevention are given, together with the general properties of specific organisms.

2. *Vaccines and Sero-Reactions*.—Assistant Professor DEKRUIF, daily from 9 to 12, and from 1 to 5, in the Bacteriological Laboratory. Laboratory fee of \$15.00 in addition to tuition fee.

This course is open to advanced students in bacteriology and to graduates in medicine. It is designed to familiarize the student with the applied methods of bacteriology, with special reference to antirabic treatment; preparation of bacterial vaccines, such as those from anthrax, plague, cholera, and typhoid fever; the serum reactions, agglutinins, precipitins, cytolymins, opsonins. Special attention will be given to the identification of blood, the Widal reaction for typhoid fever, and the Wassermann reaction for syphilis.

### PHYSIOLOGICAL CHEMISTRY

1. *Laboratory Work in Physiological Chemistry*.—Mr. P. H. PIPER, daily from 8 to 12, and from 1 to 5, in the Laboratory of Physiological Chemistry. Laboratory fee of \$15.00 in addition to tuition fee.

This course is the same as that required of students in the Medical School. Students taking this course for credit toward a university degree must pass an examination, at the end of the course, submitted by Professor F. G. NOVY. This course must be preceded by courses in inorganic, qualitative, and organic chemistry. The student begins with the study of the composition, reaction, and decomposition products of fats, carbohydrates, and proteins. The saliva, gastric, and pancreatic juices are studied in detail. The bile is next taken up, special attention being given to the methods of testing for bile acids and bile pigments in the urine, and the examination of bile stone. The composition and properties of blood, and the chemical, microscopical, and spectroscopic methods of examining blood stains are studied. Each student must examine gastric juice for the presence of hydrochloric and lactic acid, and pepsin.

The study of normal urine is taken up. Urea, uric acid, hippuric acid, and other compounds are isolated or prepared synthetically. The tests for the recognition of pathological constituents, as leucin, tyrosin, bile acids and pigments, blood, pus, albumen, and sugar, are applied to pure solutions of these substances and also to pathological urines. Urinary sediments are examined microscopically for casts, blood, oxalates, urates, etc. A thorough drill is given in the quantitative analysis of urine and milk.

### PHYSIOLOGY

1. *Laboratory Work in Physiology*.—Dr. O. M. COPE, M, T, W, Th, F, S, from 8 to 12, in the Physiological Laboratory. Laboratory fee of \$5.00 in addition to tuition fee.

This course is the same as that given in the curriculum of the Medical School, and should be preceded by courses in Biology, Chemistry, and Physics, such as are taken by students prepar-

ing to take medical work, and by Course 1 in Physiology. Students who have not covered these subjects should consult with the instructor before registering for this course.

The object of this course is not only to familiarize the student with the ordinary methods employed in physiological work, so that he will be able to read more intelligently, but to cultivate a capacity for independent observation, and to supply that intimate knowledge of physiological processes which is to be obtained only by individual work. Inasmuch as this course is intended primarily for medical students, the experiments are made on the vertebrates, and, when the character of the experiment permits, on man, the students working in pairs, and alternately serving as subject and experimenter. The experiments deal with the physiology of nerve and muscle; the physical problems of respiration and circulation; the nervous regulation of the heart, blood vessels, and respiratory mechanisms; reflex processes and their modification by re-enforcing and inhibitory influences; and some of the simpler phenomena of sensation. Each student is expected to perform individually each experiment, report the results obtained either in the form of graphic records or tabulated observations, and accompany these with such notes as will make it clear that the purpose of the experiments and the phenomena observed are clearly understood. From time to time the section meets as a whole to discuss the results of the experiments which have been made, and at such times reports are given by its members upon special topics related to the work.

## PATHOLOGY

1. *Laboratory Course in Pathology.*—Professor A. S. WARTHIN, and Assistant Professor WELLER; daily from 8 to 12, and from 1 to 3, Saturdays 8-12, in the Pathological Laboratory. Laboratory fee of \$10.00 in addition to tuition fee.

This course is the same as that given to sophomore students; undergraduates will receive credit on passing final examination.

This course covers the ground of general pathology as given in Warthin's text-book. The following pathologic states will be considered, and microscopic preparations demonstrating the same will be studied; abnormalities of development; disturbances of the circulation; atrophy; necrosis, degenerations and deposits; hypertrophy; inflammation; regeneration; tumors; special pathology of kidneys, liver, and lungs; tuberculosis; syphilis; and parasites.

2. *Course in Pathological Technique.*—A special course will be offered in Pathological Technique covering the entire ground of fixing, hardening, embedding, cutting, and staining of ma-

terial for diagnosis. The technique of rapid diagnostic methods, freezing microtome, etc., is also included. Special attention will be given also to various new specific stains, demonstration of spirochaetes in section, etc. This course is designed particularly for graduate students, graduates in medicine, and for students who have had the regular courses in undergraduate Pathology. *Four hours credit* in postgraduate work given for this course. Professor WARTHIN, and Assistant Professor WELLER, 1-4 P. M. Laboratory fee, \$5.00.

3. *Pathology of the Female Genito-Urinary Organs.*—Professor WARTHIN, and Assistant Professor WELLER, 1-4 P. M.

A special course in the pathology of the female genito-urinary tract is offered as an elective to the senior students. The practical diagnosis of discharges, excisions, curettings, etc., from the female genital tract and the various technical methods necessary for such diagnosis are considered in this course. As far as possible the material obtained from the gynecological clinic is used for this purpose. Laboratory fee, \$5.00. This course will not be given unless there are at least five applicants. *Four hours credit* in postgraduate work given for this course.

4. *Special Pathology of the Infectious Diseases.*—Professor WARTHIN and Assistant Professor WELLER.

This course is designed especially for postgraduate and advanced students, particularly for those interested in public health work. The course will include the technical methods necessary for the demonstration of pathogenic organisms in the tissues, and the study of the tissue changes produced by such parasites. Special attention will be paid to the infectious diseases of man, but modifications of the course to meet the needs of those interested in veterinary pathology will be made. This course will be given to individual applicants. Postgraduate credit of 8 hours allowed. Some knowledge of general pathological technique required. Eight hours daily required. Hours arranged with instructors. Laboratory fee of \$10.00.

5. *Autopsy Technique for Embalmers.*—Five full days in seventh week of the Summer Session. For particulars see Courses in Embalming and Sanitary Science.

## PHARMACOLOGY

*Experimental Pharmacology.*—Dr. M. I. SMITH and assistant. Daily from 1:30 to 5, in the Pharmacological Laboratory. Fee, \$5.00. The work in this subject will follow in a general way the practical course as outlined and given during the regular session. The more important drugs are studied as to their chemistry, physiological properties, and therapeutic value. Some atten-



tion will be paid to the preparation of the galenical preparations, but more emphasis will be laid upon the nature of drug action as ascertained by their administration to animals. A drug typical of a group is taken up by the class, its chemistry considered, and the resulting symptoms produced by its administration are then noted, and if possible the point of action determined.

The action of drugs upon the various organs such as the heart, is carefully studied by means of the myocardiograph, and phethysmographic tracings are taken of the kidney, liver, etc. A thorough study is made of the various methods of physiological assay of drugs.

## SURGERY

1. *Clinical Surgery*.—Dr. BARSS, daily for three hours, in the University Hospital.

This course is designed for graduates and advanced students; no credit toward graduation will be given.

This is a technical course with clinical lectures. It consists of bedside clinics, and instruction in the methods of diagnosis; also in the dressing and care of patients.

Instruction is given in the laboratory in connection with this course. Examinations of blood and urine and of pathological preparations are made as far as necessary for a complete surgical diagnosis.

2. *Operative Course in Surgical Technique and Operative Surgery*. Dr. BARSS, daily in the University Hospital.

This course consists in methods of operating and general technique of operation, and is intended to explain, as far as possible at the time of operation, the most approved methods in use.

Courses 1 and 2 are given daily for three hours, usually from 9 to 12, but the schedule time may be changed to suit the convenience of the instructor and students.

3. *Genito-Urinary Surgery*.—Hours to be arranged.

- a. *Surgical*.—Professor LOREE. This course includes both operative and diagnostic instruction upon patients presenting themselves in the Genito-Urinary Clinic. There is abundance of material for teaching purposes.

- b. *Cystoscopies*.—Professor LOREE. This includes a study of the pathological conditions of the bladder, ureters, and kidneys, revealed by cystoscopic investigation and urethral catheterization. Every practitioner taking the course is given opportunity to practice the technique of the cystoscope and catheters upon the phantom bladder.

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## MEDICINE

1. *Medical Clinics*.—Professor FOSTER, Tuesday and Friday at 11 o'clock.

Medical clinics comprehending an exposition of the more recent advances in scientific research as applied in medical practice to the diagnosis and therapy of disease. Cases from the wards will be used as examples in illustrating how physiological reaction is employed in developing functional tests. In a logical order attention will be directed to diseases of the digestive tract, such as ulcer, disorders of metabolism as exemplified in nephritis and diabetes, and finally the larger aspects of infection and immunity. The object of these clinics is to show the practical application of scientific methods to disease problems.

2. *Clinical Medicine*.—Assistant Professor L. H. NEWBURGH, daily from 1 to 4.

This course is intended for practitioners of medicine who want to review the methods of diagnosis and treatment in Internal Medicine; and become acquainted with the more modern diagnostic procedures. Those taking the course will be assigned patients in the ward and after one hour's study two or more of these patients will be demonstrated to the class as a whole. The assignments will be changed daily, so that each physician will have the opportunity of examining most of the patients who have been or are to be demonstrated. Special attention will be given to the significance of the cardiac irregularities, high blood pressure, X-ray examination, functional kidney tests, and blood examination. Not more than fifteen physicians will be accepted for Ward work, preference being given to early applicants; but any number may attend demonstrations.

3. *Laboratory Diagnosis*.—Dr. Q. O. GILBERT, daily from 9 A. M. to 12 M.

Laboratory fee, \$5.00, in addition to tuition fee.

This course while intended primarily for physicians who desire training in the clinical laboratory, may be taken by students who desire credit for a similar course given during the regular session. The course consists of instruction in methods of obtaining and preparation of specimens, their examination and interpretation. The work is largely practical in that the entire procedures are carried out by the student under supervision. The work consists of a study of urine, sputum, stomach contents, feces, exudates, transudates, spinal fluid, agglutination, reactions, including the Widal and the study of iso-agglutinins, in relation to blood transfusions. A very considerable time is spent in the study of blood and blood diseases.

Special attention is paid to the methods of making blood cultures, and the routine clinical bacteriology. Sufficient time is devoted for the student to learn the Technique of the Phenol-sulphonaphthalein test as well as the determination of blood urea. The practical work is given in connection with lectures, quizzes, and demonstrations. Microscopes and blood counters must be furnished by the student. Since it is necessary to limit the number of students to 14 in the course, applications should be made as early as possible to the Secretary of the Medical School.

## DISEASES OF THE NERVOUS SYSTEM

### 1. *Clinical Neurology.*

This course is conducted by Professor C. D. CAMP, daily from 10 to 12, and is designed for practitioners of medicine. It includes talks on the anatomy, physiology, and pathology of the brain and spinal cord and the demonstration of cases of organic and functional diseases of the nervous system. In the examination of these cases all diagnostic procedures which are of assistance in such cases—lumbar puncture, with examination of the cerebrospinal fluid, electrical examinations, etc.—will be used and explained. Instruction in the treatment of such cases by massage, electricity, and special exercises will be given; also the application of surgical treatment, its indications and contra-indications in cases of brain tumor, paralysis, epilepsy, etc. Hysteria and kindred disorders will be studied from the psychological point of view and special attention given to psycho-analysis and mental therapeutics.

## OPHTHALMOLOGY

The course in Ophthalmology will include instruction in ophthalmic surgery, external diseases of the eye, clinical bacteriology, and refraction—10 to 12 daily.

### 1. *Ophthalmic Surgery.*—Professor WALTER R. PARKER.

Operations are performed before a limited number in order that each student may have an opportunity to observe every detail of the operative technique.

### 2. *External Diseases of the Eye.*—Professor PARKER and Dr. SLOCUM.

In this course, students will be given opportunity to examine and study the cases as they come to the hospital for treatment.

### 3. *Refraction.*—Dr. SLOCUM and Dr. CLAY. Special hours will be arranged for work in refraction. Opportunity for extra work will be given to those who wish to devote special attention to this subject.

## OTO-LARYNGOLOGY

The work in Oto-laryngology is given by Professor R. BISHOP CANFIELD and Dr. ROY A. BARLOW, from 8 to 10 daily except Saturday, and is intended for both specialist and general practitioners. It is given as follows:

1. *Clinical Demonstration.*—The material of the out patient department is used to demonstrate the more common ear, nose, and throat diseases. Students have the opportunity of examining the patients and listening to clinical lectures on the conditions presented. The relationship of diseases of the ear, nose, and throat to general conditions is taken up.
2. *Operative Surgery.*—In this course minor operations are performed in the out patient department and major operations in the operating rooms of the department. Cases are studied carefully by means of the clinical history, laboratory, and operative findings. Their postoperative treatment and final result are demonstrated before the section. The student has opportunity to come into close relationship with the patient and facilities are offered for careful study of the pathological conditions presented.
3. *Functional Examination of the Ear.*—This includes the examination of the cochlear and vestibular apparatus. In this course special effort is made to take up the different diagnosis between labyrinthine and brain diseases.

## OBSTETRICS AND GYNECOLOGY

### OBSTETRICS

1. *Practical Obstetrics.*—Dr. LESLIE BOTTSFORD, *M, W, Th*, 2-5. Maternity Hospital.

This course is designed for students who have completed the work in obstetrics as outlined in the regular course for the junior year. The course is entirely practical and all the work at the Maternity Hospital is actually performed by the members of the class under the direction of the instructor. Students taking the course in turn deliver all patients. Daily postpartum visits are made at which the normal puerperium is studied in detail and all puerperal complications are closely investigated. Particular attention is given to the care of the new born child. As nearly all the infants are fed artificially for at least a month, the student has an opportunity not only to work out a formula, but to obtain experience in the actual preparation of artificial food. All treatment of patients is outlined by the student under the direction of the instructor. The number of students admitted to this course is necessarily limited.

2. *Obstetric Diagnosis*.—Dr. LESLIE BOTTSFORD, *T, F*, 2-5, Maternity Hospital.

This course consists of a careful study of the course of normal and abnormal pregnancy. The large number of patients in the Obstetric Clinic furnish abundant clinical material. The students take a careful history of the patient and study especially all the clinical signs of pregnancy. The presentation and position of the fetus, and any abnormalities presented by the patient, are carefully worked out. Especial attention will be given to methods of pelvimetry. The laboratory at the Maternity Hospital is equipped so that all necessary investigations can be made. The number of students admitted to the course will be limited.

3. *Demonstration and Manikin Course*.—Dr. JOHN SHERRICK, *M, W, Th*, 2-5, Maternity Hospital.

Demonstration course fee of \$10.00 in addition to tuition fee. Students taking this course are given individual instruction in the examination of the pregnant woman during all stages of pregnancy, and are thoroughly drilled in the mechanisms of labor for normal and pathologic presentations (on the manikin). The Maternity Hospital is so arranged that the students have opportunities for observing the actual management of labor immediately following its demonstration with the manikin. Each student has the opportunity of acquiring the technique of each obstetric operation, thus rendering his knowledge essentially practical. The principles of pelvimetry are carefully taught, and each student is given a practical examination in obstetric diagnosis and manipulation at the conclusion of the course.

This course is the same as given in the regular course in the junior year. Credit will be given for this course.

4. *Junior Palpation Course*.—Dr. LESLIE BOTTSFORD, *T, F*, 2-5, Maternity Hospital.

This course is designed to give the students additional drill in making obstetric examinations. The clinical history presented by the patient is discussed, bringing out the principal symptoms of a normal pregnancy. All variations from the normal are noted. The clinical signs of pregnancy are studied and the value of inspection, palpation, and auscultation is emphasized. The presentation and position of the fetus are mapped out. Special attention is given to methods of pelvimetry. Students taking this course have the opportunity of seeing all the confinements.

## GYNECOLOGY

5. *Clinical Gynecologic Diagnosis*.—Dr. RUDOLPH A. BARTHOLOMEW, *M, W, Th*, 8-11, University Hospital.

This course is intended for undergraduate students who have finished the junior work in Obstetrics and Gynecology, and for



graduate students. The members of the class will work out for themselves the diagnosis of gynecologic conditions and will find every opportunity offered in this course.

All the patients entering the clinic are available for purposes of instruction and are assigned to the members of the class. Each student takes the history of his patient, and makes a general physical examination, which includes the necessary laboratory investigations. The work of each student is criticised by the members of the class and instructor in charge. Pelvic examinations are made by the whole class, examination under anesthesia being resorted to in all doubtful cases. Following the examination a consultation is held regarding the findings, diagnosis, and treatment.

This course also includes a consideration of the complications arising after gynecologic operations. The diagnosis and treatment of all postoperative complications will be studied in detail, and attention will also be given to the management of the normal postoperative convalescence.

The clinical library of the Gynecology Staff Room is freely consulted and the reports of the pathologist concerning the pathologic histology of the material from the clinic are fully considered.

6. *Diagnostic and Operative Gynecology*.—Dr. RUDOLPH A. BARTHOLOMEW, T, F, 8-11, University Hospital.

This course is open to those who take Course 5.

The members of the class in turn will assist at all operations. During the course the class will receive a thorough training in modern gynecologic technique and surgical asepsis. Special attention will also be given to the administration of anesthetics, practically all being given by the members of the class under the direction of the Demonstrator of Anesthesia. Only a limited number of students will be admitted to Courses 5 and 6.

## DERMATOLOGY AND SYPHILOLOGY

1. *Section Work in Diseases of the Skin and Syphilis*.—This course is designed for graduates and advanced students. Professor WILE, and Drs. ELLIOTT and MCGARRY. Every morning from 8 to 10.

This course includes a careful study of the in and out patients of the University Hospital. The etiology, differential diagnosis and treatment of each case is thoroughly discussed. Those taking the course have an opportunity of seeing at close hand the various methods of treatment, including the intravenous injections of salvarsan and the routine treatment and care of

syphilitics and patients suffering from common and obscure dermatoses. Two hours a week of the time devoted to this course is spent in ward rounds and bed-side instruction. Fourth year students taking this course will be excused from section work, (Course 4 in the senior year).

2. *Syphilology.—Lecture and Clinic Course.*—Professor WILE. One hour and a half each week.

The study of syphilology is presented in this course in the form of didactic lectures, lantern slides, and clinics. This course deals with the clinical aspects of syphilis in its various stages and forms.



# Students Enrolled in the Summer Session in the University of Michigan Medical School in 1916

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Alfred Joseph Abbott, M.D., <i>Rush Medical School</i>	Albion
Theodore Wright Adams, <i>a</i>	Ann Arbor
Jose Alum, A.B., <i>m</i>	Arecibo, P. R.
Einer Bjarne Anderson, <i>a</i>	Ann Arbor
Laverne Hayes Andrews, <i>d</i>	Ann Arbor
Wayne Jason Atwell, A.B., <i>Nebraska Wesleyan University, A.M., g</i>	Ann Arbor
Donald Kay Bacon, <i>m</i>	Saint Paul, Minn.
Reame Leslie Bailey, <i>d</i>	Pontiac
Arlie Ray Barnes, A.B., <i>University of Indiana, A.M., ibid.,</i>	Hayden, Ind.
Frank Joseph Bauman, <i>d</i>	Mount Clemens
John Wallace Beardsley, M.D., <i>Northwestern University</i>	Macon
Bertha Alma Bennett	Indianapolis, Ind.
Victor William Bergstrom, <i>h</i>	Bay City
Bert Ira Beverly, <i>a</i>	Ann Arbor
Robert Vincent Bird, <i>d</i>	Cape Town, South Africa
David Joseph Bittker, <i>d</i>	Detroit
Galo Wenceslso Blanco, B.S., <i>g</i>	San Juan, P. R.
Charles Ancil Bosworth, <i>m</i>	Paola, Kans.
Dudley Pleasants Bowe, A.B., <i>Richmond College</i>	Richmond Va.
Milo James Brady	New Orleans, La.
Stuart Broadwell Jr.	Philadelphia, Pa.
Michael Frederick Brondstetter, M.D.	Mount Pleasant
Robert Ellsworth Brown, A.B., <i>University of Illinois, M.S., g</i>	Danville, Ill.
Ernest Herman Brunquist, A. B., <i>Bates College</i>	Hood River, Ore.
John Fairman Bulmer, <i>d</i>	Youngstown, Ohio
Eugene Loving Bulson	Fort Wayne, Ind.
Max Ronald Burnell, <i>m</i>	Flint
Alfred Joseph Burr, <i>m</i>	Manistique
Richard Edward Cahalan, A.B., <i>University of Detroit</i>	Wyandotte
Dorothy Walcott Caldwell, B.S., <i>Rhode Island State College,</i>	
<i>M.S., ibid.,</i>	Kingston, R. I.
Henrietta Anne Calhoun, B.S., <i>University of Illinois, A.M.,</i>	
<i>ibid., m</i>	Ann Arbor
William Frazier Chadwick, <i>d</i>	Muir

Leonard William Hooson Charnock	Manchester, England
Harry Leroy Clark, A.B., <i>g</i>	Ann Arbor
John Howard Cobane, <i>a</i>	Detroit
Melissa Hazel Cobb, B.S.	Ann Arbor
Theodore Hill Conklin, A. B., <i>m</i>	Kingston, N. Y.
John Timon Connell	Ann Arbor
Edward John Coram, B.S., <i>University of Idaho, m</i>	Grangeville, Idaho
George Albert Cronk, <i>d</i>	Montour Falls, N. Y.
Joseph Rogers Darnall, <i>m</i>	Washington, D. C.
James Ethelbert Davis, M.D., <i>Detroit College of Medicine, A.M., g</i>	Detroit
Abel de Juan, <i>a</i>	San Juan, P. R.
Seth Ellis DeMuth, M.D., <i>Eclectic Medical Institute</i>	Cecil, Ohio
Ralph Arthur Denison, <i>d</i>	Durand
Casimir Anthony Domzalski, A.B., <i>University of Detroit, m.</i>	Detroit
Albertus Wynand Eksteen, <i>d</i>	Piquetberg, South Africa
William T. Elliott	Chicago, Ill.
Theodore VanReenen Engels, <i>d</i>	Paarl, South Africa
Hazel Hildegarde Eppler	Detroit
Benjamin Joseph Eslick, <i>d</i>	Iron Mountain
Bernard Fantus, M.D., <i>University of Illinois</i>	Chicago, Ills.
Florence Fenwick, <i>a</i>	Ann Arbor
Thomas Samuel Finney, A.B., <i>Wabash College</i>	Attica, Ind.
Walter Abram Fort, B.S., <i>m</i>	Centerville
George Albert Frederick, <i>d</i>	Owosso
Cassius Ward Friberg	Nashville, Tenn.
Helen L. B. Gage, <i>m</i>	Wixom
Myron Elnathan Garner, <i>d</i>	Fredonia, Pa.
Earl August Gelhaar, <i>d</i>	Detroit
William McKee German, A.B.	Pittsburg, Pa.
William Bell Goddard, M.D., <i>Vanderbilt University</i>	Nashville, Tenn.
John Orton Goodsell Jr., <i>d</i>	Saginaw
Richard Emanuel Gordon	Ann Arbor
Glenn Arthur Graham, <i>d</i>	Lapeer
Charles W. Greene, A.B., <i>Stanford University, A. M., ibid,</i>	
Ph.D., <i>Johns Hopkins' University</i>	Columbia, Mo.
Ray Ellsworth Greenwood	Kankakee, Ill.
Boyd Loreno Greever	Huntington, W. Va.
Jose Mautalvan Guerrero, B.S., <i>Institute National de Occident de</i>	
<i>Leon, m</i>	Leon, Nicaragua
Gerald Graham Hall, <i>d</i>	Detroit
Signe Maria Hamalainen, <i>d</i>	Ann Arbor
Campbell Harvey, A.B., <i>m</i>	Detroit
Clyde Knapp Hasley, A.B., <i>m</i>	Monroe
John Hayward, <i>d</i>	Johannesburg, South Africa
George Rudolph Herrmann, B.S., <i>m</i>	Fort Wayne, Ind.
Richard Uno Hirwas, <i>d</i>	Gwinn



Lynn Arthur Hoag, B.S., <i>m, g</i>	Ann Arbor
Arthur A. Hobbs Jr.	Kansas City, Mo.
Champ Holt Holmes, B.S., <i>University of Georgia</i>	Macon, Ga.
Alan Dean Honey, <i>d</i>	Saint Joseph
Edgar Allan Honey, <i>d</i>	Kalamazoo
Merle Russell Hoon, A.B., <i>Westminster College</i>	Mercer, Pa.
John Gardiner Huck, A.B., <i>Johns Hopkins University</i>	Baltimore, Md.
Ernest Victor Hughes, <i>d</i>	Massillon, Ohio
Cyril Christopher Hussey, B.S., <i>Ohio University</i>	Sidney, Ohio
Carroll C. Hyde, B.S., <i>Alma College, m</i>	Addison
Charles Raymond Illick, A.B., <i>Taylor University, m</i>	Hulmeville, Pa.
Bertram Victor Ingle, <i>d</i>	Cape Town, South Africa
Louis Manning James Jr., <i>d</i>	Ypsilanti
Leo George Jentgen, <i>m</i>	Detroit
George Sutton Johnston, A.B.	Grand Rapids
Wayne Alvin Johnston, <i>a</i>	Champaign, Ill.
Edward Burton Kellogg, M.D.	Belleville
Edward Newcomb Kellogg, <i>d</i>	Wolcott, N. Y.
Lee Earl Kelsey, M.D.	Lakeview
Rockwell M. Kempton, <i>m</i>	North Adams
Eugene Ghert Klaver, <i>d</i>	Grand Haven
James Sybert Klump, <i>a</i>	Saginaw
Nathaniel Hawthorne Lang	Waverly, Ga.
Tan Piew Lee, A.B., <i>Taylor University, m</i>	Singapore, China
Fred Oliver Lepley, A.B., <i>Oberlin College</i>	Monroeville, Ohio
Verne Emory LeRoy, A.B., <i>Ohio State University, M.S., ibid</i>	East Lansing
Joseph Stanley Leszynski, <i>m</i>	Detroit
Elmore F. Lewis, <i>m</i>	Vandalia
Treverton Evans Lewis, <i>d</i>	Plymouth, Pa.
Tsoong Ching Lieu, B.S.	Foo Chow, China
L. Mason Lyons, <i>m</i>	Kansas City, Mo.
Albert MacDonald, <i>d</i>	Marshall
Charles Bell McGlumphy, Ph.C., M.D., <i>Ohio State University</i>	Galveston, Texas
Charles Maggio, <i>h</i>	Rochester, N. Y.
Hendriko, Jacobus Marais, <i>d</i>	Robertson, South Africa
Karol Jan Marcinkiewicz, <i>d</i>	Detroit
Thomas Meriwether Marks, <i>m</i>	Lexington, Ky.
Jennings Bryan Mason	Saginaw
Elmer Stephens Maxwell, M.D., <i>Vanderbilt University</i>	Nashville, Tenn.
Edward McNee Mead, <i>h</i>	Ann Arbor
Abie Robert Melcher, <i>d</i>	Kimberly, South Africa
Walter Julius Meullenhagen	Detroit
Harold Fildew Millman, <i>p</i>	Saint Johns
Donald Lyle Mitchell, <i>d</i>	Leslie

Luis Raymond Moczo	San Juan, P. R.
Frank Macquarie Moxon, A.B., <i>Maryville College</i>	Memphis, Tenn.
John Henry Muyskens, A.B.	Grand Rapids
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Mosco Fernando Nunez, A.B., <i>University of Texas</i>	Swainsboro, Ga.
Augustus Joseph O'Brien, Ph.C., B.S., M.D.	Ironwood
John Brennan O'Donoughue	Chicago
Samuel Osborn, B.S., M.D.	Lansing
Algernon Arthur Palmer, <i>m</i>	Chelsea
John Purl Parsons, B.S.	Boise, Idaho
Dueber Hampden Phillips, <i>m</i>	Saginaw
Charles Burdette Pillsbury, <i>h</i>	Duluth, Minn.
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Cyrus Watt Poley, A.B., <i>University of Colorado</i> , M.D., <i>ibid</i>	Boulder, Colo.
Harry Harlow Pool, A.B., <i>Ohio Wesleyan University</i>	Urbana, Ohio
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Carl Frost Raver, B.S., M.D.	Grand Forks, N. Dak.
Stanley Barnes Robertson, A.B., <i>Hillsdale College</i>	Ann Arbor
Tom Howard Robertson, <i>m</i>	Ann Arbor
James Bailey Rogers, Ph.C., <i>Vanderbilt University</i> , M.D., <i>ibid</i>	Independence, Iowa
Viola Pevey Russell, A.B., <i>Vassar College</i> , <i>m</i>	Wellesley, Mass.
Roman Jan Sadowski, M.S., <i>University of Detroit</i>	Detroit
Raymond Dominic Schirack, A.B., <i>Ohio State University</i> , <i>m</i>	Saint Henry, Ohio
Albert Joachim Schmoler, M.D., <i>Michigan College of Medicine and Surgery</i>	Detroit
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Murray Maywood Sears, B.S., M.D.	Kalamazoo
Charles Wesley Sellers	Detroit
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Porter Albert Sherman, A.B., <i>Hiram College</i> , <i>a</i>	South Haven
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Emory Walter Sink, A.B., M.S., <i>m</i>	Ann Arbor
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Solomon Arthur Sobul, B.S., <i>University of Chicago</i>	Cleveland, Ohio
James Benjamin Somers	Rodney, Ont.
John Henry Staacke, <i>h</i>	Duluth, Minn.
James Mark Stanton, <i>m</i>	Richmond, Ind.
Henry Starikoff, <i>d</i>	Detroit
Edward Stebbins, B.S., <i>Hobart College</i> , <i>h</i>	Brooklyn, N. Y.

Jane Darling Stevenson, <i>m</i>	Akron, Ohio
Donald Wickham Stewart, M.D., <i>Southern Medical College</i>	Beaver, Pa.
Washington Parker Stowe, B.S., <i>Ohio Northern University, m</i>	North East, Pa.
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John Wright Sweet, <i>d</i>	North Baltimore, Ohio
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George Watt, M.D., <i>Harvard University</i>	Laconia, N. H.
Perry Van Whitaker, <i>d</i>	Flint
William Isaac Whitaker, <i>d</i>	Flint
Albert DeForest Wickett, B.S., <i>m</i>	Mount Pleasant
Arthur Guy Williams, A.B.	Waupaca, Wis.
Max Milton Williams, <i>d</i>	Owosso
Harold Edward Wisner, <i>h</i>	Ann Arbor
Henry John Woessner Jr., <i>m</i>	Ann Arbor
Walter John Wright, M.D.	Ypsilanti
Jerome Zeigler, <i>m</i>	Maysville, Ky.

## SUMMARY OF STUDENTS

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